

VPDES PERMIT FACT SHEET

This document gives pertinent information concerning the issuance of the VPDES permit listed below. This permit is being processed as a Minor, Industrial permit. The effluent limitations contained in this permit will maintain the Water Quality Standards of 9VAC25-260. The discharge results from treatment of leachate generated by the operation of an on-site municipal solid waste landfill. This permit action establishes applicable effluent limitations, monitoring requirements, and special conditions associated with the permitted discharge.

1. **Owner Name:** Atlantic Waste Disposal, Inc.
Owner Mailing Address: 3474 Atlantic Lane
Waverly, VA 23890

Facility Name: Atlantic Waste Disposal
Location: 3474 Atlantic Lane
Waverly, VA 23890
Sussex County
SIC Code: 4953 –Refuse Systems
2. **Permit Number:** VA0092797
Existing Permit Expiration Date: New Issuance
3. **Owner Contact:** Michael R. Thomas
Telephone No: (804)834-8300
Email Address: mthomas@wm.com
4. **Application Complete Date:** January 28, 2014
Permit Drafted By: Bradford Ricks Dates: 2/3, 6/24, 8/14, 8/29, 9/19/14
DEQ Regional Office: Piedmont
Reviewed By: Sheri Shiflett Date: 2/4/2014
Emilee Adamson Dates: 7/18, 8/28, 9/9/14

Public Comment Period Dates: October 23, 2014 to November 24, 2014
5. **Receiving Stream** Black Swamp
River Mile 5ABLS004.57
Basin Chowan and Dismal Swamp
Subbasin Chowan River
Section 2b
Class VII
Special Standards None

7-Day, 10-Year Low Flow: None
1-Day, 10-Year Low Flow: None
30-Day, 5-Year Low Flow: None
30-Day, 10-Year Low Flow: None
Harmonic Mean Flow: None
Tidal? No
On 303(d) list? No

Flow Frequency Memorandum provided as **Attachment A**

6. **Operator License Requirements:** The Virginia Department of Professional and Occupational Regulation requires licensed operators for wastewater works. A wastewater works using biological treatment methods including biological filters and advanced treatment methods including reverse osmosis with a design hydraulic capacity greater than 0.04 MGD but equal to or less than 0.5 MGD requires a Class III licensed operator (18 VAC 160-20-130.C & 9 VAC 25-31-200.C).

7. **Reliability Class (9 VAC 25-790-300):** Not required as this facility is not subject to the referenced Sewage Collection and Treatment Regulations.

8. **Permit Characterization:** (X) Private (X) New Discharge (X) Minor
(X) Issuance (X) Industrial

9. **Discharge Description:**

Outfall Number	Discharge Source	Treatment ¹	Design Average Flow ²	Design Maximum Flow ²
001	Landfill leachate, truck wash water	Grit removal; Sedimentation; Membrane filtration; reverse osmosis; ion exchange	0.20 MGD	0.30 MGD

¹ At the time of permit drafting, the exact treatment method has not been determined. Pilot studies are assessing the use of stand-alone membrane filtration, stand-alone reverse osmosis, or combining the two.

² The permit provides for plant expansion to an average design flow of 0.50 MGD. Due to receiving water characteristics, plant expansion will not alter effluent concentration limitations. See **Attachment B** for facility map and diagrams.

Atlantic Waste Disposal (AWD) is a RCRA Subtitle D Non-Hazardous Waste Landfill which receives municipal solid waste for disposal. Facilities currently exist to remove leachate from the landfill into two storage tanks with a combined capacity of 1,000,000 gallons. Piping and pumping facilities will be installed to transfer leachate to the proposed treatment system designed to utilize a membrane bioreactor treatment system followed by reverse osmosis.

Final effluent will be discharged to an existing stormwater retention basin which discharges into a constructed wetland prior to discharging off-site into Black Swamp Creek. The point of compliance, Outfall 001, will be located prior to entering the retention basin.

10. **Discharge Location Description:** Coordinates = 37° 04' 05"N; -77° 10' 58" W. Disputanta South, VA topographic map 068C. See location map in **Attachment B**.

11. **Sludge Disposal:** Solids generated through the treatment process will be thickened and disposed in the AWD landfill, solid waste permit SWP562.

12. **Material Storage:**

The proposed treatment process is not anticipated to require the storage of materials which could cause or contribute to a resulting discharge of pollutants from the site.

13. **Ambient Water Quality Information:** The receiving stream at the point of discharge is considered an intermittent stream with a 1Q10 and a 7Q10 of 0 MGD, thus theoretical low flows are expected to be comprised entirely of effluent. Under these low flow conditions, ambient data are not applicable for limitation development; instead, expected effluent data were used to analyze permit limitations.

14. **Anti-degradation Review & Comments:**

Tier: 1 X 2 _____ 3 _____

The State Water Control Board's Water Quality Standards includes an antidegradation policy (9 VAC 25-260-30). All state surface waters are provided one of three levels of antidegradation protection. For Tier 1 or existing use protection, existing uses of the water body and the water quality to protect these uses must be maintained. Tier 2 water bodies have water quality that is better than the water quality standards. Significant lowering of the water quality of Tier II waters is not allowed without an evaluation of the economic and social impacts. Tier 3 water bodies are exceptional waters and are so

designated by regulatory amendment. The antidegradation policy prohibits new or expanded discharges into exceptional waters.

The anti-degradation review begins with a Tier determination. Black Swamp is considered a Tier 1 water body because of its intermittent nature at the point of discharge.

15. **Site Inspection:** Because this treatment facility is not yet constructed or operational, a site inspection was not possible.

16. **Effluent Screening & Limitation Development:**

A limitation evaluation begins by determining chronic and acute wasteload allocations (WLAs) using the MSTRANTI Excel Spreadsheet. MSTRANTI produces wasteload allocations (WLAs) using data inputs determined by the permit writer to be appropriate based on monitoring data, best professional judgment, and a comparison to the Virginia Water Quality Standards (9 VAC 25-260 et. seq.). MSTRANTI also provides a list of Site Specific Target Values (SSTVs) which are concentrations below which metals data will not require limitation.

The permittee provided representative data from an out-of-state municipal solid waste landfill treating leachate with a reverse osmosis system similar to the one proposed for this facility. See **Attachment C** for representative effluent data submitted with the permit issuance application. See **Attachment D** for MSTRANTI source data and results.

WLAs calculated through MSTRANTI are entered into the STATS.exe computer application along with the appropriate quantification level (QL) and at least one data point for all corresponding detected constituents. The only constituents identified in the permit application which require this reasonable potential analysis are ammonia-N and zinc. The output from the STATS.exe application indicates if a need for permit limitation exists and calculates that limitation if required.

Both ammonia –N and zinc indicated reasonable potential to exceed the water quality standard. These parameters are limited by the Federal Effluent Limitation Guidelines (FEG), 40 CFR 445, Subpart B – RCRA Subtitle D Non-Hazardous Waste Landfill (**Attachment E**); therefore, it is necessary to determine if the limitations provided therein are protective of water quality standards in the receiving stream. To make this determination, the maximum monthly average limitation for ammonia-N and zinc as specified by the FEG were input as a single observed data point in STATS.exe to determine whether or not a more stringent effluent limitation is needed. Though a human health standard exists for zinc, it was not considered in this evaluation because the acute and chronic standard is much more stringent.

Ammonia (as N): The STATS.exe output (**Attachment D**) indicates that the maximum monthly and maximum daily average FEG limitations of 4.9 mg/L and 10 mg/L, respectively, are not protective of water quality based on the expected characteristics of the discharge and of the receiving stream. The more stringent, water quality based maximum monthly and maximum daily limitations calculated by STATS.exe of 2.84 mg/L are therefore appropriate in lieu of the limitations specified in the associated FEG. Because effluent is also limited to an average TKN of 3.0 mg/L which is considered protective of average ammonia toxicity above 1.8 mg/L, the average ammonia limitation is not required.

The effluent is also limited by a daily maximum TKN of 6.0 mg/L which is considered protective of average ammonia toxicity above 3.6 mg/L. At the permittee's request, a temperature limitation and lower pH limitation were added to the permit to ensure that ammonia toxicity at or below 3.6 mg/L could not occur. As presented in the STATS.exe printout titled *Ammonia – pH and Temp Limited*, a maximum temperature of 30°C and maximum pH of 7.3 result in an ammonia limit of 3.77 mg/L. This is greater than 3.6 mg/L and therefore protected by the TKN limitation of 6.0 mg/L, providing for the replacement of a daily maximum ammonia limitation with the corresponding pH and temperature limitations. The acute and chronic wasteload allocations specified in the STATS.exe printout are taken from the ammonia surface water quality criteria specified in 9VAC25-360-155.A and B at the specified pH and temperature.

Total Recoverable Zinc: The STATS.exe output indicates that the maximum monthly average and maximum daily limitations specified by the FEG of 110 µg/L and 200 µg/L, respectively, are not protective of water quality in the receiving stream. The more stringent water quality standard based limitation of 36 µg/L is therefore established as the average monthly and maximum daily effluent limitation.

Monitoring and limitation requirements for Outfall 001 are otherwise based on the application of the above-mentioned FEG with the exception of the upper limit for pH, which is lowered from the FEG to establish an upper limit which will prevent ammonia toxicity as a result of the existing TKN limitations. All limitations with basis for limitation are summarized in Table 1 below.

Table 1: Basis for Effluent Limitations

EFFLUENT CHARACTERISTICS	Tier	BASIS FOR LIMITS	DISCHARGE LIMITS				MONITORING REQUIREMENTS		
			MONTHLY AVERAGE		DAILY MIN	DAILY MAX		FREQUENCY	SAMPLE TYPE
Flow (MGD)	1, 2	NA	NL		NA	NL		1 per Month	TIRE
pH (S.U.)	1, 2	2, 5	NA		6.0	7.3		1 per Month	Grab
Temperature (Degrees C)	1, 2	5	NA		NA	30		1 per Month	Grab
Carbonaceous Biochemical Oxygen Demand (cBOD ₅)	1	3	10 mg/L	7600 g/d	NA	20 mg/L	15000 g/d	1 per Month	Grab
	2			19000 g/d			38000 g/d		
Total Suspended Solids (TSS) (mg/L)	1	4	10 mg/L	7600 g/d	NA	20 mg/L	15000 g/d	1 per Month	Grab
	2			19000 g/d			38000 g/d		
Total Kjeldahl Nitrogen (TKN)	1	3	3.0 mg/L	2300 g/d	NA	6.0 mg/L	4500 g/d	1 per Month	Grab
	2			5700 g/d			11000 g/d		
Dissolved Oxygen (DO) (mg/L)	1, 2	3	NA		5.0	NA		1 per Month	Grab
α-Terpineol (µg/L)	1, 2	2	16		NA	33		1 per Month	Grab
Benzoic Acid (µg/L)	1, 2	2	71		NA	120		1 per Month	Grab
p-Cresol (µg/L)	1, 2	2	14		NA	25		1 per Month	Grab
Phenol (µg/L)	1, 2	2	15		NA	26		1 per Month	Grab
Total Recoverable Zinc (µg/L)	1, 2	1	36		NA	36		1 per Month	Grab

NL = No Limitation
NA = Not Applicable

Tier

- 0.2 MGD design average flow
- 0.5 MGD design average flow

Bases for Limits

- Water Quality Standards Based Limitation
- Federal Effluent Guidelines, 40 CFR 445.24 – Landfills Point Source Category (**Attachment E**); Subpart B, RCRA Subtitle D Non-Hazardous Waste Landfill; New Source Performance Standards.
- July 28, 2014 Stream Sanitation Analysis. (**Attachment D**)
- March 9, 1987 SWCB memo, "Advisory Notification of Effluent limits for Swamp and Marsh Waters" and GM14-2003, section MN-2, Part E
- Permit Writer Judgment

Because sample frequency and sample type are not specified in the FEG, these are established according to Guidance Memo No. 14-2003, Section IN-2, Part D. The referenced guidance recommends monthly frequency for continuous process wastewater discharges at industrial facilities

and grab sampling when these discharges have limited variability in flow and characteristic such as leachate generated from a municipal solid waste landfill at an average flow of 0.20 – 0.50 MGD.

17. **Anti-backsliding:** Not applicable as this is a new permit with no previously set permit limitations.
18. **Compliance Schedules:**
9 VAC 25-31-250 of the VPDES Permit Regulation allows compliance schedules to meet new or more stringent limitations; however, because this is a new facility which has not yet been constructed, a compliance schedule is not allowed per section A.2 of the referenced regulation.
19. **Special Conditions:**
 - I.B.1 **New Source Water Quality Monitoring**
Rationale: State Water Control Law § 62.1-44.21 authorizes the Board to request information needed to determine the discharge's impact on State waters. To ensure that water quality standards are maintained, the permittee is required to analyze the facility's effluent for the substances noted. The permit limitations are based on assumed effluent quality characteristics. These assumptions (and the permit basis) can only be validated with actual effluent data. The submission of actual data is required in the application form instructions.
 - I.B.2 **Whole Effluent Toxicity (WET) Monitoring Requirements**
Rationale: VPDES Permit Regulation, 9 VAC 25-31-210 and 220 I, requires monitoring in the permit to provide for and assure compliance with all applicable requirements of the State Water Control Law and the Clean Water Act. WET endpoint evaluation (WETLIM10) is provided in **Attachment F**.
 - I.B.3 **Notification Levels**
Rationale: Required by VPDES Permit Regulation, 9 VAC 25-31-200 A for all manufacturing, commercial, mining, and silvicultural dischargers.
 - I.B.4 **Operation and Maintenance Manual Requirement**
Rationale: Required by Code of Virginia § 62.1-44.16; VPDES Permit Regulation, 9 VAC 25-31-190 E, and 40 CFR 122.41(e). These require proper operation and maintenance of the permitted facility. Compliance with an O&M manual ensures this.
 - I.B.5 **Licensed Operator Requirement**
Rationale: Required by VPDES Permit Regulation, 9 VAC 25-31-200 C and The Code of Virginia § 54.1-2300 et seq, Rules and Regulations for Waterworks and Wastewater Works Operators and Onsite Sewage System Professionals (18 VAC 160-20-10 et seq.), requires licensure of operators.
 - I.B.6 **Materials Handling/Storage**
Rationale: 9 VAC 25-31-50 A prohibits the discharge of any wastes into State waters unless authorized by permit. Code of Virginia § 62.1-44.16 and § 62.1-44.17 authorizes the Board to regulate the discharge of industrial waste or other waste.
 - I.B.7 **Compliance Reporting**
Rationale: Authorized by VPDES Permit Regulation, 9 VAC 25-31-190 J 4 and 220 I. This condition is necessary when pollutants are monitored by the permittee and a maximum level of quantification and/or a specific analytical method is required in order to assess compliance with a permit limit or to compare effluent quality with a numeric criterion. The condition also establishes protocols for calculation of reported values. Quantification levels are as specified in Guidance Memorandum GM14-2003; however, where not specified by GM14-2003, the quantification level is established equal to the lowest concentration specified by the applicable Federal Effluent Guideline, 40 CFR 445.21.
 - I.B.8 **Total Maximum Daily Load (TMDL) Reopener**

Rationale: Section 303(d) of the Clean Water Act requires that total maximum daily loads (TMDLs) be developed for streams listed as impaired. This special condition is to allow the permit to be reopened if necessary to bring it into compliance with any applicable TMDL approved for the receiving stream. The re-opener recognizes that, according to section 402(o)(1) of the Clean Water Act, limits and/or conditions may be either more or less stringent than those contained in this permit. Specifically, they can be relaxed if they are the result of a TMDL, basin plan, or other wasteload allocation prepared under section 303 of the Act.

I.B.9 Water Quality Criteria Reopener

Rationale: VPDES Permit Regulation, 9 VAC 25-31-220 D requires effluent limitations to be established which will contribute to the attainment or maintenance of the water quality standards.

I.B.10 Facility Closure Plan

Rationale: This condition establishes the requirement to submit a closure plan for the treatment works if the treatment facility is being replaced or is expected to close. This is necessary to ensure industrial sites and treatment works are properly closed so that the risk of untreated waste water discharge, spills, leaks and exposure to raw materials is eliminated and water quality maintained. Section 62.1-44.21 requires every owner to furnish when requested plans, specification, and other pertinent information as may be necessary to determine the effect of the wastes from his discharge on the quality of state waters, or such other information as may be necessary to accomplish the purposed of the State Water Control Law.

I.B.11 Concept Engineering Report

Rationale: § 62.1-44.16 of the Code of Virginia requires industrial facilities to obtain DEQ approval for proposed discharges of industrial wastewater. A CER means a document setting forth preliminary concepts or basic information for the design of industrial wastewater treatment facilities and the supporting calculations for sizing the treatment operations.

I.B.12 Indirect Dischargers

Rationale: This condition provides notice and approval of wastewaters of substantial difference in character of pollutants being introduced into the treatment works by offsite sources. This information may be needed to maintain VPDES Permit Regulation, 9 VAC 25-31-220 D, which requires effluent limitations to be established which will contribute to the attainment or maintenance of the water quality standards.

Part II Conditions Applicable to All Permits

Rationale: VPDES Permit Regulation, 9 VAC 25-31-190 requires all VPDES permits to contain or specifically cite the conditions listed.

20. **NPDES Permit Rating Work Sheet:** Total Score 70. See **Attachment G**.

21. **Changes to the permit:** Not applicable.

22. **Variances/Alternate Limits or Conditions:** Not applicable.

23. **Public Notice Information required by 9 VAC 25-31-280 B:**

All pertinent information is on file and may be inspected or copied by contacting Brad Ricks at:

Piedmont Regional Office
4949-A Cox Rd
Glen Allen, VA 23060
(804) 527-5129
Bradford.Ricks@deq.virginia.gov

DEQ accepts comments and requests for public hearing by hand delivery, e-mail, fax or postal mail. All comments and requests must be in writing and be received by DEQ during the comment period. Submittals must include the names, mailing addresses and telephone numbers of the

commenter/requester and of all persons represented by the commenter/requester. A request for public hearing must also include: 1) The reason why a public hearing is requested. 2) A brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requester, including how and to what extent such interest would be directly and adversely affected by the permit. 3) Specific references, where possible, to terms and conditions of the permit with suggested revisions. A public hearing may be held, including another comment period, if public response is significant, based on individual requests for a public hearing, and there are substantial, disputed issues relevant to the permit. The public may review the draft permit and application at the DEQ Piedmont Regional Office by appointment or may request copies of the documents from the contact person listed above.

24. **303(d) Listed Segments:** During the 2012 305(b)/303(d) Water Quality Assessment report, Black Swamp was assessed as a Category 4C water ("Water is impaired or threatened for one or more designated uses but does not require a TMDL because the impairment is not caused by a pollutant and/or is determined to be caused by natural conditions.") The applicable fact sheet is included in **Attachment A**. The Aquatic Life Use is impaired due to naturally-occurring low dissolved oxygen. The Recreation and Wildlife Uses are fully supported. The Fish Consumption Use was not assessed.

This facility is located within the study watershed for the Assamoosick Swamp and Tributaries Bacterial TMDL, which was approved by the EPA on 6/3/2010 and by the SWCB on 9/30/2010. This proposed discharge is not expected to be a source of bacteria, which will be confirmed upon completion of the sample requirements specified in Part I.B.1 of the permit.

25. **Additional Comments:**

Concept Engineering Report (CER): § 62.1-44.16 of the Code of Virginia requires industrial facilities to obtain DEQ approval for proposed discharges of industrial wastewater. A CER means a document setting forth preliminary concepts or basic information for the design of industrial wastewater treatment facilities and the supporting calculations for sizing the treatment operations. According to the Department's CER guidelines, the permit application may substitute for submittal of a formal CER when conventional treatment is used and the discharge is considered non-significant. Based on this guidance, submittal of the CER will be required as specified by Part I.B.11 prior to facility construction as the treatment proposed for this facility is considered advanced rather than conventional.

Threatened and Endangered Species Review: As required for a new permit issuance, screening for threatened and endangered species within a 2-mile radius of facility outfalls was performed and identified the presence of the state endangered blackbanded sunfish (*Enneacanthus chaetodon*); however, as presented in the areas outlined in red on the maps and listing included in **Attachment H**, this species does not occur downstream of the outfall within this radius. Virginia Department of Conservation and Recreation (DCR) and Virginia Department of Game and Inland Fisheries (DGIF) coordination forms and DCR's response letter are provided in **Attachment H**.

Stormwater: Stormwater associated with industrial activity is addressed through VPDES general permit No. VAR051428.

EPA Comments: EPA has waived the right to comment on this draft permit.

VDH Comments: VDH provided the following comment in a memorandum dated January 14, 2014, "The raw water intake for the City of Norfolk waterworks is located approximately 31 miles downstream of the areas to be disturbed. This should be sufficient distance to minimize the impacts of the disturbances."

Other Agency Comments: None

Owner Comments: Owner comments were received by email on October 7, 2014. Comments received with DEQ response are provided in **Attachment I**.

Public Comment: During the public comment period of October 23, 2014 to November 24, 2014, the public notice was published on October 22, 2014 and October 29, 2014 in the in the Sussex Surry Dispatch. The County Administrator, Board Chairman, and the Crater Planning District Commission

were also directly provided with a copy of the public notice by mail in accordance with Code of Virginia § 62.1-44.15:01.A.2 , 9 VAC 25-31-290.G.2 and GM11-005. In addition, the County Administrator, and downstream riparian landowners were notified of receipt of the permit application by letters dated February 8, 2014 and January 23, 2014, respectively.

During the 30 day public comment period, comments were received on November 21, 2014 from one citizen, Mr. Frank Irving, Executive Director of the Sussex Service Authority (SSA). Mr. Irving's comments include a request for public hearing. Comments received with DEQ response are provided in **Attachment J**.

Fees: The permit application fee was verified as received and processed on December 27, 2013.

Controversial Project / Permit: No.

Previous Board Action: None.

E-DMR Participation: The facility has not yet enrolled; however, the facility is strongly encouraged to utilize E-DMR upon permit issuance.

Virginia Environmental Excellence Program (VEEP): The facility is a VEEP participant at the E3 level.

Planning Conformance Statement: The discharge is not addressed in any planning document but will be included when the plan is updated.

New Issuance Coordination:

- Local Government Ordinance Form: The required form was signed by the County Administrator on 1/21/2014 and provided as part of the VPDES application on 1/26/2014.
- Notification of Local Governments and Riparian Landowners: The required local government notification of the VPDES permit application was sent to County Administrator Harris by letter dated February 8, 2014. There is one riparian landowner within one half mile downstream of the discharge and notice of the permit application was sent to the property owner, Old Dominion Electric Cooperative, by letter dated January 23, 2014.

26. Summary of attachments to this Fact Sheet:

Attachment A	Flow Frequency Memorandum
Attachment B	Site Maps
Attachment C	Representative Facility Effluent Data
Attachment D	Limitation Development Documents
Attachment E	Federal Effluent Limitation Guidelines
Attachment F	Whole Effluent Toxicity Evaluation
Attachment G	NPDES Industrial Permit Rating Worksheet
Attachment H	Threatened and Endangered Species Review
Attachment I	Owner Comments and Response
Attachment J	Public Comments and Response

Attachment A
Flow Frequency Memorandum

MEMORANDUM

DEPARTMENT OF ENVIRONMENTAL QUALITY
Piedmont Regional Office
4949-A Cox Road Glen Allen, Virginia 23060

SUBJECT: Flow Frequency Determination / 303(d) Status
Atlantic Waste Disposal, Inc. – Sussex County Landfill (VA0092797)

TO: Brad Ricks.

FROM: Jennifer Palmore, P.G.

DATE: January 27, 2014

COPIES: File

Atlantic Waste Disposal's Sussex County Landfill proposes to discharge to Black Swamp at river mile 5ABLS004.57. Stream flow frequencies are required for use in developing effluent limitations for the VPDES permit.

The landfill will discharge to an intermittent stream as shown on the USGS Disputanta South 7.5' Quadrangle topographic map. The flow frequencies for intermittent streams are presented below.

Black Swamp at discharge point:

1Q30 = 0.0 cfs	High Flow 1Q10 = 0.0 cfs
1Q10 = 0.0 cfs	High Flow 7Q10 = 0.0 cfs
7Q10 = 0.0 cfs	High Flow 30Q10 = 0.0 cfs
30Q10 = 0.0 cfs	HM = 0.0 cfs
30Q5 = 0.0 cfs	

During low-flow conditions, the tributary will consist entirely of effluent. Therefore, the effluent data should be used to characterize the receiving stream.

Due to its intermittent nature, the receiving stream should be considered a Tier 1 water.

During the 2012 305(b)/303(d) Water Quality Assessment report, Black Swamp was assessed as a Category 4C water ("Water is impaired or threatened for one or more designated uses but does not require a TMDL because the impairment is not caused by a pollutant and/or is determined to be caused by natural conditions.") The applicable fact sheet is attached. The Aquatic Life Use is impaired due to naturally-occurring low dissolved oxygen. The Recreation and Wildlife Uses are fully supported. The Fish Consumption Use was not assessed.

The watershed is considered Class VII swampwaters.

The Sussex County Landfill is located within the study watershed for the Assamoosick Swamp and Tributaries Bacterial TMDL, which was approved by the EPA on 6/3/2010 and by the SWCB on 9/30/2010. The discharge was not addressed in the report.

If you have any questions concerning this analysis, please let me know.

2012 Fact Sheets for 303(d) Waters

RIVER BASIN:	Chowan River and Dismal Swamp Basins	HYDROLOGIC UNIT:	03010201
STREAM NAME:	Assamoosick Swamp and Tributaries		
TMDL ID:	K29R-01-DO	2012 IMPAIRED AREA ID:	VAP-K19R-04
ASSESSMENT CATEGORY:	4C	TMDL DUE DATE:	2010
IMPAIRED SIZE:	58.53 - Miles	Watershed:	VAP-K29R
INITIAL LISTING:	1998		
UPSTREAM LIMIT:	Headwaters		
DOWNSTREAM LIMIT:	Mouth of Assamoosick Swamp		

Assamoosick Swamp, Seacorrie Swamp, German Swamp, Pigeon Swamp, Black Swamp, UT to Assamoosick Swamp XDW, Ivy Branch, Deep Branch, Parkers Branch, and UT to Assamoosick Swamp XGS.

CLEAN WATER ACT GOAL AND USE SUPPORT:

Aquatic Life Use - Not Supporting

IMPAIRMENT: Dissolved Oxygen

Assamoosick Swamp, Seacorrie Swamp, German Swamp, and Pigeon Swamp were originally listed as impaired of the Aquatic Life Use in 1998 based on pH and DO exceedances throughout the watershed. Station 5AASM008.12 was later mistakenly listed on EPA's "Waters Identified to Virginia for Listing Consideration During Development of the Next List" for pH even though the segment was already 303(d) listed. The DO TMDLs for these creeks were due in 2010.

In the year 2002 cycle, Black Swamp and UT to Assamoosick Swamp XDW were added for DO and pH, and UT to Seacorrie Swamp XDX was added for DO. These TMDLs were due in 2014.

During the year 2006 cycle, the watershed was reclassified as Class VII swampwaters. Almost all segments are assessed as Cat. 4C for DO in the 2010 cycle, however, additional monitoring during the 2010 cycle showed a dissolved oxygen exceedance rate of only 1/12 at XDX, therefore XDX is considered fully supporting and was partially delisted.

In addition, Ivy Branch, Deep Branch, Parkers Branch, and UT XGS were added as Category 4C in the 2010 cycle due to exceedance rates of 7/12 at 5AIVY001.00, 3/12 at 5ADEP001.73, 2/9 at 5APRK002.12, and 3/9 at 5AXGS000.96.

IMPAIRMENT SOURCE: Natural Conditions

The dissolved oxygen exceedances in this segment are attributed to natural conditions. Targeted monitoring and wetland delineation may be necessary to identify the limits of the segment affected by natural conditions. Such segments should be reclassified as wetlands where appropriate.

RECOMMENDATION: WQS Change

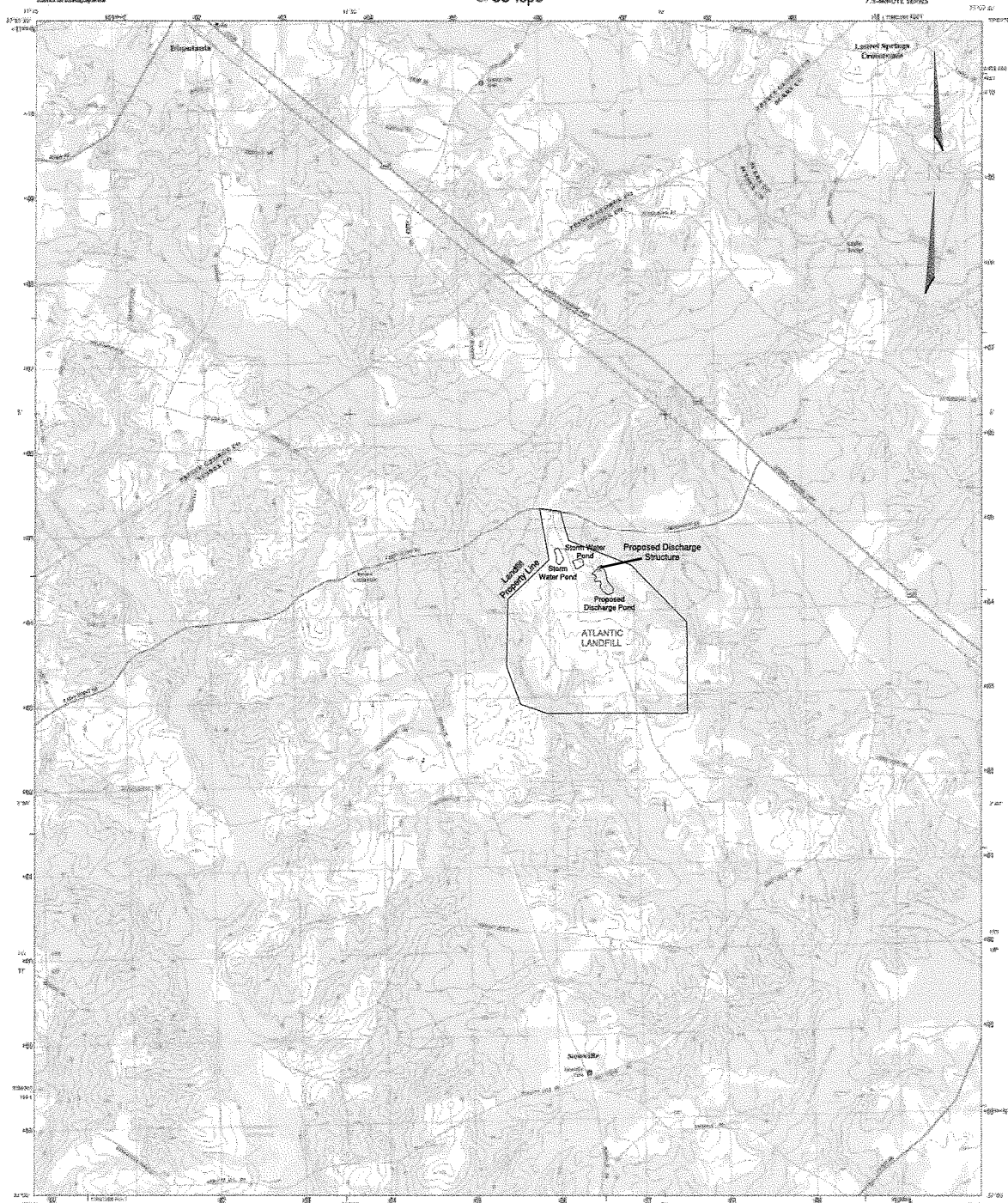
Attachment B
Site Maps



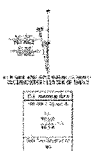
U.S. DEPARTMENT OF THE INTERIOR
U. S. GEOLOGICAL SURVEY



DISPUTANTA SOUTH QUADRANGLE
VIRGINIA
7.5-MINUTE SERIES



Produced by the United States Geological Survey
Data derived from the 1:250,000 scale
topographic map of the Disputanta South
Quadrangle, Virginia, 7.5-Minute Series, 1984
edition, and the 1:250,000 scale
topographic map of the Disputanta South
Quadrangle, Virginia, 7.5-Minute Series, 1984
edition.



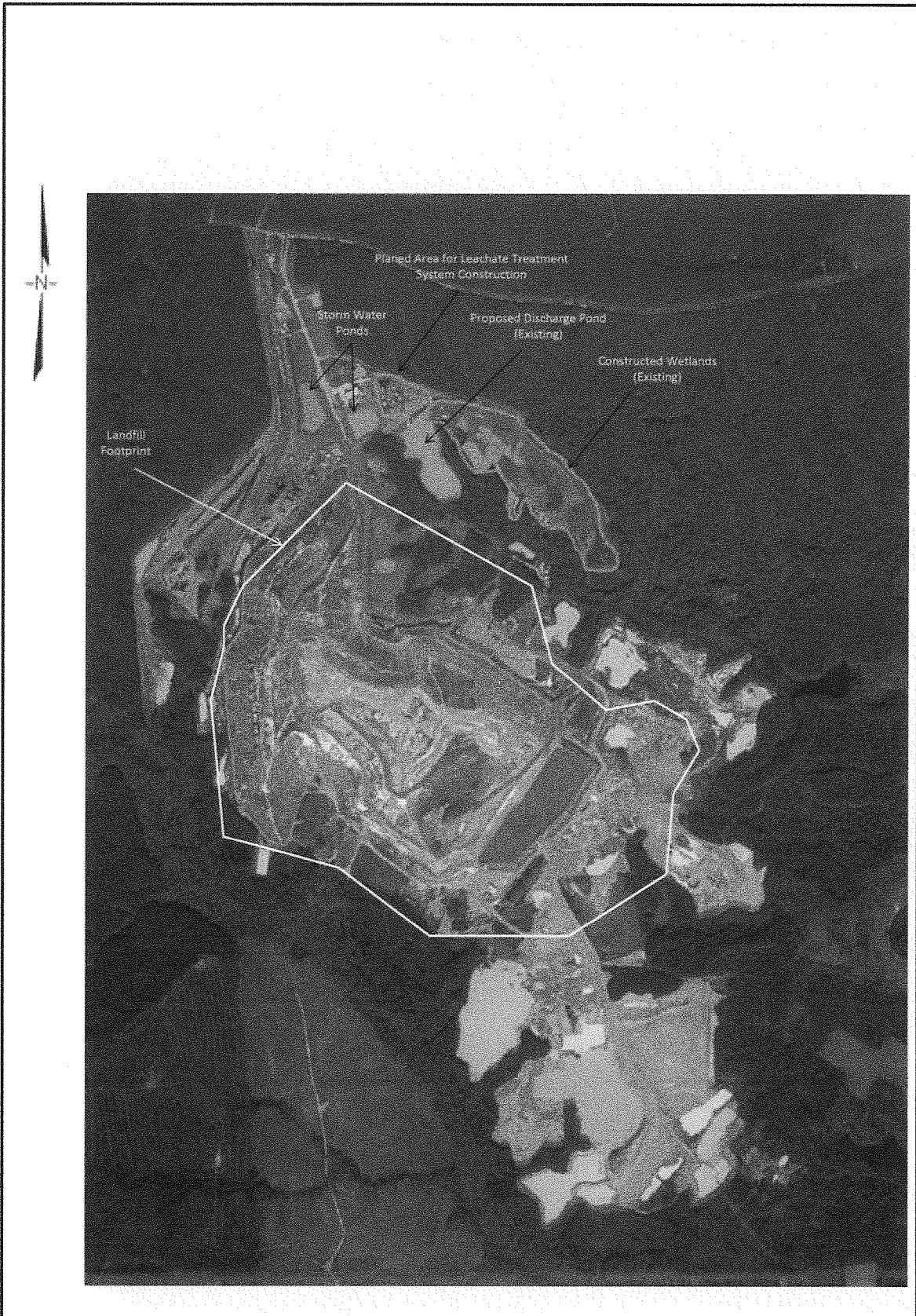
Feature	Symbol
Proposed Discharge Structure	Star
Proposed Discharge Point	Circle
Water Pond	Blue area
South Water Pond	Blue area

Legend
Proposed Discharge Structure
Proposed Discharge Point
Water Pond
South Water Pond
Atlantic Landfill

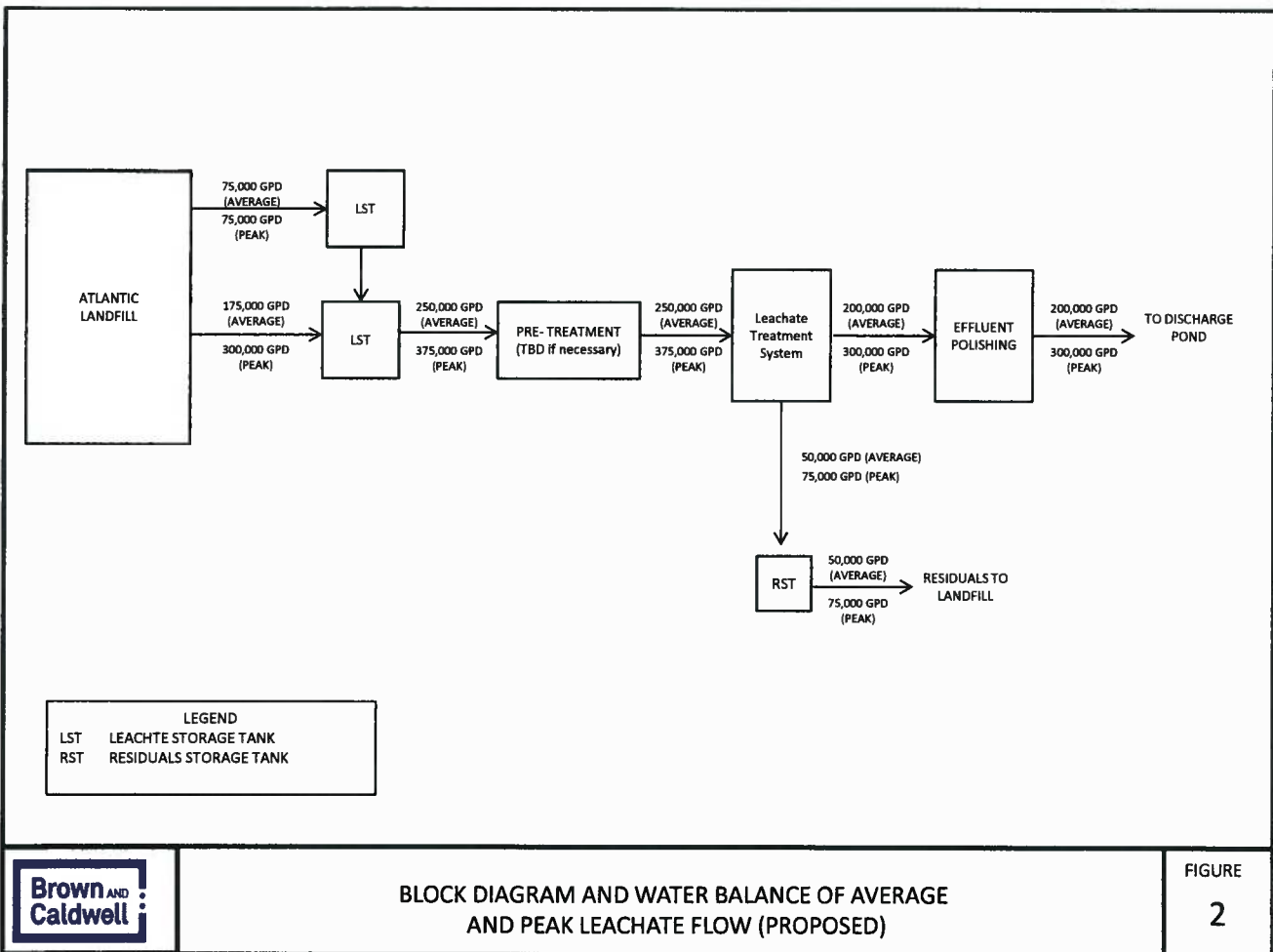
DISPUTANTA SOUTH, VA
2017



ATLANTIC WASTE DISPOSAL VACITY MAP



—→ Indicates water flow through connecting underground conduit



Attachment C
Representative Facility Effluent Data

Table 2. Example Effluent Parameter Concentrations From a Reverse Osmosis System Treating Landfill Leachate

Parameter	Units	Result	Comments
Ammonia Nitrogen - Distilled	mg/L as N	0.5	
Nitrate - Nitrite	mg/L as N	40.0	Reference treatment system does not provide nitrogen reduction prior to RO filtration. Denitrification is planned in the proposed system and lower nitrate levels (<10 mg/L) are anticipated.
Chemical Oxygen Demand	mg/L	45.5	
BOD 5-day	mg/L	2.0	
Barium	mg/L	0.01	
Boron	mg/L	9.9	
Bromide	mg/L	6.6	
Fluoride	mg/L	0.3	
Phosphorus	mg/L	0.1	
Sulfate	mg/L	6.0	
Sulfide	mg/L	0.1	
Sulfite	mg/L	2.0	
Total Organic Carbon	mg/L	27.3	
Total suspended solids	mg/L	5.0	
pH	s.u.	6.7	
Color	Color Units	78.0	
1,1,1,2-Tetrachloroethane	µg/L	< 1.00	Reported at Detection Limit
1,1,1-Trichloroethane	µg/L	< 1.00	Reported at Detection Limit
1,1,2,2-Tetrachloroethane	µg/L	< 1.00	Reported at Detection Limit
1,1,2-Trichloroethane	µg/L	< 1.00	Reported at Detection Limit
1,1-Dichloroethane	µg/L	< 1.00	Reported at Detection Limit
1,1-Dichloroethene	µg/L	< 1.00	Reported at Detection Limit
1,1-Dichloropropene	µg/L	< 1.00	Reported at Detection Limit
1,2,3-Trichlorobenzene	µg/L	< 1.00	Reported at Detection Limit
1,2,3-Trichloropropane	µg/L	< 1.00	Reported at Detection Limit
1,2,4-Trichlorobenzene	µg/L	< 1.00	Reported at Detection Limit
1,2,4-Trimethylbenzene	µg/L	< 1.00	Reported at Detection Limit
1,2-Dibromo-3-chloropropane	µg/L	< 5.00	Reported at Detection Limit
1,2-Dibromoethane	µg/L	< 1.00	Reported at Detection Limit
1,2-Dichlorobenzene	µg/L	< 1.00	Reported at Detection Limit
1,2-Dichloroethane	µg/L	< 1.00	Reported at Detection Limit
1,2-Dichloropropane	µg/L	< 1.00	Reported at Detection Limit
1,3,5-Trimethylbenzene	µg/L	< 1.00	Reported at Detection Limit
1,3-Dichlorobenzene	µg/L	< 1.00	Reported at Detection Limit
1,3-Dichloropropane	µg/L	< 1.00	Reported at Detection Limit
1,4-Dichlorobenzene	µg/L	< 1.00	Reported at Detection Limit
1,4-Dioxane	µg/L	< 50.0	Reported at Detection Limit
1-Propanol	µg/L	< 100	Reported at Detection Limit
2,2-Dichloropropane	µg/L	< 1.00	Reported at Detection Limit
2-Butanone	µg/L	< 5.00	Reported at Detection Limit
2-chloro-1,3-butadiene	µg/L	< 1.00	Reported at Detection Limit
2-Chloroethylvinyl ether	µg/L	< 1.00	Reported at Detection Limit
2-Chlorotoluene	µg/L	< 1.00	Reported at Detection Limit
2-Hexanone	µg/L	< 5.00	Reported at Detection Limit

Table 2. Example Effluent Parameter Concentrations From a Reverse Osmosis System Treating Landfill Leachate

Parameter	Units	Result	Comments
2-Methyl-1-propanol	µg/L	< 50.0	Reported at Detection Limit
2-Methylnaphthalene	µg/L	< 5.00	Reported at Detection Limit
2-Propanol	µg/L	< 100	Reported at Detection Limit
3-Chloro-1-Propene	µg/L	< 1.00	Reported at Detection Limit
4-Chlorotoluene	µg/L	< 1.00	Reported at Detection Limit
4-Isopropyltoluene	µg/L	< 1.00	Reported at Detection Limit
4-Methyl-2-Pentanone	µg/L	< 1.00	Reported at Detection Limit
Acetone	µg/L	< 10.0	Reported at Detection Limit
Acetonitrile	µg/L	< 20.0	Reported at Detection Limit
Acrolein	µg/L	< 10.0	Reported at Detection Limit
Acrylonitrile	µg/L	< 5.00	Reported at Detection Limit
Allyl chloride	µg/L	< 1.00	Reported at Detection Limit
Benzene	µg/L	< 1.00	Reported at Detection Limit
Benzyl chloride	µg/L	< 5.00	Reported at Detection Limit
Bromobenzene	µg/L	< 1.00	Reported at Detection Limit
Bromochloromethane	µg/L	< 1.00	Reported at Detection Limit
Bromodichloromethane	µg/L	< 1.00	Reported at Detection Limit
Bromoform	µg/L	< 1.00	Reported at Detection Limit
Bromomethane	µg/L	< 1.00	Reported at Detection Limit
Carbon Disulfide	µg/L	< 1.00	Reported at Detection Limit
Carbon Tetrachloride	µg/L	< 1.00	Reported at Detection Limit
Chlorobenzene	µg/L	< 1.00	Reported at Detection Limit
Chlorodibromomethane	µg/L	< 1.00	Reported at Detection Limit
Chloroethane	µg/L	< 1.00	Reported at Detection Limit
Chloroform	µg/L	< 1.00	Reported at Detection Limit
Chloromethane	µg/L	< 1.00	Reported at Detection Limit
Chloroprene	µg/L	< 1.00	Reported at Detection Limit
cis-1,2-Dichloroethene	µg/L	< 1.00	Reported at Detection Limit
cis-1,3-Dichloropropene	µg/L	< 1.00	Reported at Detection Limit
Cyclohexane	µg/L	< 1.00	Reported at Detection Limit
Dibromomethane	µg/L	< 1.00	Reported at Detection Limit
Dichlorobromomethane	µg/L	< 1.00	Reported at Detection Limit
Dichlorodifluoromethane	µg/L	< 1.00	Reported at Detection Limit
Dichlorofluoromethane	µg/L	< 1.00	Reported at Detection Limit
Diethyl Ether	µg/L	< 5.00	Reported at Detection Limit
Ethyl Methacrylate	µg/L	< 1.00	Reported at Detection Limit
Ethylbenzene	µg/L	< 1.00	Reported at Detection Limit
Hexachlorobutadiene	µg/L	< 1.00	Reported at Detection Limit
Hexachloroethane	µg/L	< 5.00	Reported at Detection Limit
Iodomethane	µg/L	< 5.00	Reported at Detection Limit
Isobutyl alcohol	µg/L	< 50.0	Reported at Detection Limit
Isopropylbenzene	µg/L	< 1.00	Reported at Detection Limit
m,p-Xylene	µg/L	< 2.00	Reported at Detection Limit
Methacrylonitrile	µg/L	< 10.0	Reported at Detection Limit
Methyl Ethyl Ketone	µg/L	< 5.00	Reported at Detection Limit

Table 2. Example Effluent Parameter Concentrations From a Reverse Osmosis System Treating Landfill Leachate

Parameter	Units	Result	Comments
Methyl methacrylate	µg/L	< 1.00	Reported at Detection Limit
Methyl-tert-butyl ether	µg/L	< 1.00	Reported at Detection Limit
Methylcyclohexane	µg/L	< 1.00	Reported at Detection Limit
Methylene Chloride	µg/L	< 1.00	Reported at Detection Limit
n-Butylbenzene	µg/L	< 1.00	Reported at Detection Limit
n-Propylbenzene	µg/L	< 1.00	Reported at Detection Limit
Naphthalene	µg/L	< 1.00	Reported at Detection Limit
o-Xylene	µg/L	< 1.00	Reported at Detection Limit
Propionitrile	µg/L	< 10.0	Reported at Detection Limit
sec-Butylbenzene	µg/L	< 1.00	Reported at Detection Limit
Styrene	µg/L	< 1.00	Reported at Detection Limit
tert-Butylbenzene	µg/L	< 1.00	Reported at Detection Limit
Tetrachloroethene	µg/L	< 1.00	Reported at Detection Limit
Tetrahydrofuran	µg/L	< 5.00	Reported at Detection Limit
Toluene	µg/L	< 1.00	Reported at Detection Limit
Total Xylene	µg/L	< 2.00	Reported at Detection Limit
trans-1,2-Dichloroethene	µg/L	< 1.00	Reported at Detection Limit
trans-1,3-Dichloropropene	µg/L	< 1.00	Reported at Detection Limit
trans-1,4-Dichloro-2-butene	µg/L	< 2.00	Reported at Detection Limit
Tribromomethane	µg/L	< 1.00	Reported at Detection Limit
Trichloroethene	µg/L	< 1.00	Reported at Detection Limit
Trichlorofluoromethane	µg/L	< 1.00	Reported at Detection Limit
Trichloromethane	µg/L	< 1.00	Reported at Detection Limit
Vinyl Acetate	µg/L	< 1.00	Reported at Detection Limit
Vinyl Chloride	µg/L	< 1.00	Reported at Detection Limit
1,1-Biphenyl	µg/L	< 11	Reported at Detection Limit
1,2,4,5-Tetrachlorobenzene	µg/L	< 11	Reported at Detection Limit
1,2,4-Trichlorobenzene	µg/L	< 11	Reported at Detection Limit
1,2-Dichlorobenzene	µg/L	< 11	Reported at Detection Limit
1,3-Dichlorobenzene	µg/L	< 11	Reported at Detection Limit
1,3-Dinitrobenzene	µg/L	< 21	Reported at Detection Limit
1,4-Dichlorobenzene	µg/L	< 11	Reported at Detection Limit
1,4-Naphthoquinone	µg/L	< 11	Reported at Detection Limit
1-Naphthylamine	µg/L	< 11	Reported at Detection Limit
1-Nitrosopiperidine	µg/L	< 11	Reported at Detection Limit
2,3,4,6-Tetrachlorophenol	µg/L	< 21	Reported at Detection Limit
2,4,5-Trichlorophenol	µg/L	< 11	Reported at Detection Limit
2,4,6-Trichlorophenol	µg/L	< 11	Reported at Detection Limit
2,4-Dichlorophenol	µg/L	< 11	Reported at Detection Limit
2,4-Dimethylphenol	µg/L	< 11	Reported at Detection Limit
2,4-Dinitrophenol	µg/L	< 53	Reported at Detection Limit
2,4-Dinitrotoluene	µg/L	< 11	Reported at Detection Limit
2,6-Dichlorophenol	µg/L	< 11	Reported at Detection Limit
2,6-Dinitrotoluene	µg/L	< 11	Reported at Detection Limit
2-Acetylaminofluorene	µg/L	< 21	Reported at Detection Limit

Table 2. Example Effluent Parameter Concentrations From a Reverse Osmosis System Treating Landfill Leachate

Parameter	Units	Result	Comments
2-Chloro-Naphthalene	µg/L	< 11	Reported at Detection Limit
2-Chlorophenol	µg/L	< 11	Reported at Detection Limit
2-Methyl-4,6-dinitrophenol	µg/L	< 53	Reported at Detection Limit
2-Methylnaphthalene	µg/L	< 11	Reported at Detection Limit
2-Methylphenol	µg/L	< 11	Reported at Detection Limit
2-Naphthylamine	µg/L	< 11	Reported at Detection Limit
2-Nitroaniline	µg/L	< 53	Reported at Detection Limit
2-Nitrophenol	µg/L	< 11	Reported at Detection Limit
3,3-Dichlorobenzidine	µg/L	< 21	Reported at Detection Limit
3,3-Dimethylbenzidine	µg/L	< 21	Reported at Detection Limit
3,4-Methylphenol	µg/L	< 11	Reported at Detection Limit
3-Methylcholanthrene	µg/L	< 11	Reported at Detection Limit
3-Methylphenol	µg/L	< 11	Reported at Detection Limit
3-Nitroaniline	µg/L	< 53	Reported at Detection Limit
4,6-Dinitro-2-methylphenol	µg/L	< 53	Reported at Detection Limit
4-Aminobiphenyl	µg/L	< 11	Reported at Detection Limit
4-Bromophenylphenylether	µg/L	< 11	Reported at Detection Limit
4-Chloro-3-methylphenol	µg/L	< 11	Reported at Detection Limit
4-Chloroaniline	µg/L	< 11	Reported at Detection Limit
4-Chlorophenylphenylether	µg/L	< 11	Reported at Detection Limit
4-Methylphenol	µg/L	< 11	Reported at Detection Limit
4-Nitroaniline	µg/L	< 21	Reported at Detection Limit
4-Nitrophenol	µg/L	< 53	Reported at Detection Limit
5-Nitro-o-toluidine	µg/L	< 21	Reported at Detection Limit
7,12-Dimethylbenz(a)-anthracene	µg/L	< 11	Reported at Detection Limit
Acenaphthene	µg/L	< 11	Reported at Detection Limit
Acenaphthylene	µg/L	< 11	Reported at Detection Limit
Acetophenone	µg/L	< 11	Reported at Detection Limit
alpha-Terpineol	µg/L	< 11	Reported at Detection Limit
Aniline	µg/L	< 21	Reported at Detection Limit
Anthracene	µg/L	< 11	Reported at Detection Limit
Atrazine	µg/L	< 11	Reported at Detection Limit
Azobenzene	µg/L	< 11	Reported at Detection Limit
Benzaldehyde	µg/L	< 11	Reported at Detection Limit
Benzidine	µg/L	< 11	Reported at Detection Limit
Benzo(a)anthracene	µg/L	< 11	Reported at Detection Limit
Benzo(a)pyrene	µg/L	< 11	Reported at Detection Limit
Benzo(b)fluoranthene	µg/L	< 11	Reported at Detection Limit
Benzo(g,h,i)perylene	µg/L	< 11	Reported at Detection Limit
Benzo(k)fluoranthene	µg/L	< 11	Reported at Detection Limit
Benzoic Acid	µg/L	< 53	Reported at Detection Limit
Benzyl Alcohol	µg/L	< 21	Reported at Detection Limit
bis(2-Chloroethoxy)methane	µg/L	< 11	Reported at Detection Limit
bis(2-Chloroethyl)ether	µg/L	< 11	Reported at Detection Limit
bis(2-Chloroisopropyl)ether	µg/L	< 11	Reported at Detection Limit

Table 2. Example Effluent Parameter Concentrations From a Reverse Osmosis System Treating Landfill Leachate

Parameter	Units	Result	Comments
bis(2-Ethylhexyl)phthalate	µg/L	< 5.3	Reported at Detection Limit
Butyl benzylphthalate	µg/L	< 11	Reported at Detection Limit
Caprolactam	µg/L	< 11	Reported at Detection Limit
Chlorobenzilate	µg/L	< 11	Reported at Detection Limit
Chrysene	µg/L	< 11	Reported at Detection Limit
cis-Diallate	µg/L	< 11	Reported at Detection Limit
Di-N-Butyl Phthalate	µg/L	< 11	Reported at Detection Limit
Di-N-Octylphthalate	µg/L	< 11	Reported at Detection Limit
Di-n-propylnitrosamine	µg/L	< 11	Reported at Detection Limit
Diallate	µg/L	< 21	Reported at Detection Limit
Diallate-A	µg/L	< 21	Reported at Detection Limit
Diallate-B	µg/L	< 21	Reported at Detection Limit
Dibenzo(a,h)anthracene	µg/L	< 11	Reported at Detection Limit
Dibenzofuran	µg/L	< 11	Reported at Detection Limit
Diethyl Phthalate	µg/L	< 11	Reported at Detection Limit
Dimethoate	µg/L	< 21	Reported at Detection Limit
Dimethyl Phthalate	µg/L	< 11	Reported at Detection Limit
Diphenylamine	µg/L	< 11	Reported at Detection Limit
Disulfoton	µg/L	< 21	Reported at Detection Limit
Ethyl Methanesulfonate	µg/L	< 11	Reported at Detection Limit
Famphur	µg/L	< 21	Reported at Detection Limit
Fluoranthene	µg/L	< 11	Reported at Detection Limit
Fluorene	µg/L	< 11	Reported at Detection Limit
Hexachlorobenzene	µg/L	< 11	Reported at Detection Limit
Hexachlorobutadiene	µg/L	< 11	Reported at Detection Limit
Hexachlorocyclopentadiene	µg/L	< 11	Reported at Detection Limit
Hexachloroethane	µg/L	< 11	Reported at Detection Limit
Hexachloropropene	µg/L	< 11	Reported at Detection Limit
Indeno(1,2,3-cd)pyrene	µg/L	< 11	Reported at Detection Limit
Isodrin	µg/L	< 21	Reported at Detection Limit
Isophorone	µg/L	< 11	Reported at Detection Limit
Isosafrole	µg/L	< 11	Reported at Detection Limit
Kepone	µg/L	< 110	Reported at Detection Limit
m,p-Cresol	µg/L	< 11	Reported at Detection Limit
Methapyrilene	µg/L	< 21	Reported at Detection Limit
Methyl Methanesulfonate	µg/L	< 11	Reported at Detection Limit
Methyl Parathion	µg/L	< 11	Reported at Detection Limit
N-Nitrosodibutylamine	µg/L	< 11	Reported at Detection Limit
N-Nitrosodiethylamine	µg/L	< 11	Reported at Detection Limit
n-Nitrosodimethylamine	µg/L	< 11	Reported at Detection Limit
n-Nitrosodiphenylamine	µg/L	< 21	Reported at Detection Limit
N-nitrosodipropylamine	µg/L	< 11	Reported at Detection Limit
N-Nitrosomethylethylamine	µg/L	< 11	Reported at Detection Limit
N-Nitrosopyrrolidine	µg/L	< 11	Reported at Detection Limit
Naphthalene	µg/L	< 11	Reported at Detection Limit

Table 2. Example Effluent Parameter Concentrations From a Reverse Osmosis System Treating Landfill Leachate

Parameter	Units	Result	Comments
Nitrobenzene	µg/L	< 11	Reported at Detection Limit
o,o,o-Triethylphosphothioate	µg/L	< 11	Reported at Detection Limit
o-Cresol	µg/L	< 11	Reported at Detection Limit
o-Toluidine	µg/L	< 11	Reported at Detection Limit
p-Dimethylaminoazobenzene	µg/L	< 11	Reported at Detection Limit
p-Phenylenediamine	µg/L	< 21	Reported at Detection Limit
Parathion	µg/L	< 11	Reported at Detection Limit
Pentachlorobenzene	µg/L	< 11	Reported at Detection Limit
Pentachloronitrobenzene	µg/L	< 11	Reported at Detection Limit
Pentachlorophenol	µg/L	< 53	Reported at Detection Limit
Phenacetin	µg/L	< 11	Reported at Detection Limit
Phenanthrene	µg/L	< 11	Reported at Detection Limit
Phenol	µg/L	< 11	Reported at Detection Limit
Phorate	µg/L	< 21	Reported at Detection Limit
Pronamide	µg/L	< 11	Reported at Detection Limit
Pyrene	µg/L	< 11	Reported at Detection Limit
Pyridine	µg/L	< 53	Reported at Detection Limit
Safrole	µg/L	< 11	Reported at Detection Limit
sym-Trinitrobenzene	µg/L	< 11	Reported at Detection Limit
Thionazin	µg/L	< 21	Reported at Detection Limit
Total Cresol	µg/L	< 21	Reported at Detection Limit
Total Methyl Phenol	µg/L	< 21	Reported at Detection Limit
trans-Diallate	µg/L	< 11	Reported at Detection Limit

Ricks, Bradford (DEQ)

From: Brazil, Brian [BBrazil@BrwnCald.com]
Sent: Friday, June 20, 2014 1:12 PM
To: Ricks, Bradford (DEQ)
Subject: Atlantic - Draft Discharge permit

Brad-

How are things going, I hope this email finds you well. I was just checking in to see how the review and draft permit was coming. It took considerably longer than I anticipated but I found some hardness information. We anticipated hardness levels following effluent polishing (limestone bed) to be about 25 mg/L (measured 22 mg/L) and pH about 7.2 based on the limited evaluation we did as testing was not designed to optimize the process. We will have the some ability to adjust the hardness (and pH) in order to provide us higher discharge limits. Any guidance would be appreciated to make sure the control strategy is in place to meet a target range.

Is possible for us to see a likely discharge parameters and limits so that we can assess the potential impact on the treatment system design?

Thanks for your help. Brian

Brian Brazil
Brown and Caldwell | Beltsville, MD
BBrazil@brwncald.com
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Attachment D
Limitation Development Documents

FRESHWATER WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name: **Atlantic Waste Disposal Inc**

Permit No.: **VA0092797**

Receiving Stream: **Black Swamp**

Version: OWP Guidance Memo 00-2011 (8/24/00)

Stream Information

Mean Hardness (as CaCO3) =	25 mg/L
90% Temperature (Annual) =	32 deg C
90% Temperature (Wet season) =	deg C
90% Maximum pH =	7.5 SU
10% Maximum pH =	6.9 SU
Tier Designation (1 or 2) =	1
Public Water Supply (PWS) Y/N? =	n
Trout Present Y/N? =	n
Early Life Stages Present Y/N? =	Y

Stream Flows

1Q10 (Annual) =	0 MGD
7Q10 (Annual) =	0 MGD
30Q10 (Annual) =	0 MGD
1Q10 (Wet season) =	MGD
30Q10 (Wet season) =	MGD
30Q5 =	0 MGD
Harmonic Mean =	0 MGD

Mixing Information

Annual - 1Q10 Mix =	100 %
- 7Q10 Mix =	100 %
- 30Q10 Mix =	100 %
Wet Season - 1Q10 Mix =	%
- 30Q10 Mix =	%

Effluent Information

Mean Hardness (as CaCO3) =	25 mg/L
90% Temp (Annual) =	32 deg C
90% Temp (Wet season) =	deg C
90% Maximum pH =	7.5 SU
10% Maximum pH =	6.9 SU
Discharge Flow =	0.3 MGD

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Acenaphthene	0	--	--	na	9.9E+02	--	--	na	9.9E+02	--	--	--	--	--	--	--	--	--	--	na	9.9E+02
Acrolein	0	--	--	na	9.3E+00	--	--	na	9.3E+00	--	--	--	--	--	--	--	--	--	--	na	9.3E+00
Acrylonitrile ^C	0	--	--	na	2.5E+00	--	--	na	2.5E+00	--	--	--	--	--	--	--	--	--	--	na	2.5E+00
Aldrin ^C	0	3.0E+00	--	na	5.0E-04	3.0E+00	--	na	5.0E-04	--	--	--	--	--	--	--	--	3.0E+00	--	na	5.0E-04
Ammonia-N (mg/l) (Yearly)	0	1.99E+01	1.41E+00	na	--	1.99E+01	1.41E+00	na	--	--	--	--	--	--	--	--	--	1.99E+01	1.41E+00	na	--
Ammonia-N (mg/l) (High Flow)	0	1.99E+01	4.36E+00	na	--	1.99E+01	4.36E+00	na	--	--	--	--	--	--	--	--	--	1.99E+01	4.36E+00	na	--
Anthracene	0	--	--	na	4.0E+04	--	--	na	4.0E+04	--	--	--	--	--	--	--	--	--	--	na	4.0E+04
Antimony	0	--	--	na	6.4E+02	--	--	na	6.4E+02	--	--	--	--	--	--	--	--	--	--	na	6.4E+02
Arsenic	0	3.4E+02	1.5E+02	na	--	3.4E+02	1.5E+02	na	--	--	--	--	--	--	--	--	--	3.4E+02	1.5E+02	na	--
Barium	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Benzene ^C	0	--	--	na	5.1E+02	--	--	na	5.1E+02	--	--	--	--	--	--	--	--	--	--	na	5.1E+02
Benzidine ^C	0	--	--	na	2.0E-03	--	--	na	2.0E-03	--	--	--	--	--	--	--	--	--	--	na	2.0E-03
Benzo (a) anthracene ^C	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	na	1.8E-01
Benzo (b) fluoranthene ^C	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	na	1.8E-01
Benzo (k) fluoranthene ^C	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	na	1.8E-01
Benzo (a) pyrene ^C	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	na	1.8E-01
Bis2-Chloroethyl Ether ^C	0	--	--	na	5.3E+00	--	--	na	5.3E+00	--	--	--	--	--	--	--	--	--	--	na	5.3E+00
Bis2-Chloroisopropyl Ether	0	--	--	na	6.5E+04	--	--	na	6.5E+04	--	--	--	--	--	--	--	--	--	--	na	6.5E+04
Bis 2-Ethylhexyl Phthalate ^C	0	--	--	na	2.2E+01	--	--	na	2.2E+01	--	--	--	--	--	--	--	--	--	--	na	2.2E+01
Bromoform ^C	0	--	--	na	1.4E+03	--	--	na	1.4E+03	--	--	--	--	--	--	--	--	--	--	na	1.4E+03
Butylbenzylphthalate	0	--	--	na	1.9E+03	--	--	na	1.9E+03	--	--	--	--	--	--	--	--	--	--	na	1.9E+03
Cadmium	0	8.2E-01	3.8E-01	na	--	8.2E-01	3.8E-01	na	--	--	--	--	--	--	--	--	--	8.2E-01	3.8E-01	na	--
Carbon Tetrachloride ^C	0	--	--	na	1.6E+01	--	--	na	1.6E+01	--	--	--	--	--	--	--	--	--	--	na	1.6E+01
Chlordane ^C	0	2.4E+00	4.3E-03	na	8.1E-03	2.4E+00	4.3E-03	na	8.1E-03	--	--	--	--	--	--	--	--	2.4E+00	4.3E-03	na	8.1E-03
Chloride	0	8.6E+05	2.3E+05	na	--	8.6E+05	2.3E+05	na	--	--	--	--	--	--	--	--	--	8.6E+05	2.3E+05	na	--
TRC	0	1.9E+01	1.1E+01	na	--	1.9E+01	1.1E+01	na	--	--	--	--	--	--	--	--	--	1.9E+01	1.1E+01	na	--
Chlorobenzene	0	--	--	na	1.6E+03	--	--	na	1.6E+03	--	--	--	--	--	--	--	--	--	--	na	1.6E+03

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Chlorodibromomethane ^C	0	--	--	na	1.3E+02	--	--	na	1.3E+02	--	--	--	--	--	--	--	--	--	--	na	1.3E+02
Chloroform	0	--	--	na	1.1E+04	--	--	na	1.1E+04	--	--	--	--	--	--	--	--	--	--	na	1.1E+04
2-Chloronaphthalene	0	--	--	na	1.6E+03	--	--	na	1.6E+03	--	--	--	--	--	--	--	--	--	--	na	1.6E+03
2-Chlorophenol	0	--	--	na	1.5E+02	--	--	na	1.5E+02	--	--	--	--	--	--	--	--	--	--	na	1.5E+02
Chlorpyrifos	0	8.3E-02	4.1E-02	na	--	8.3E-02	4.1E-02	na	--	--	--	--	--	--	--	--	--	8.3E-02	4.1E-02	na	--
Chromium III	0	1.8E+02	2.4E+01	na	--	1.8E+02	2.4E+01	na	--	--	--	--	--	--	--	--	--	1.8E+02	2.4E+01	na	--
Chromium VI	0	1.6E+01	1.1E+01	na	--	1.6E+01	1.1E+01	na	--	--	--	--	--	--	--	--	--	1.6E+01	1.1E+01	na	--
Chromium, Total	0	--	--	1.0E+02	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Chrysene ^C	0	--	--	na	1.8E-02	--	--	na	1.8E-02	--	--	--	--	--	--	--	--	--	--	na	1.8E-02
Copper	0	3.6E+00	2.7E+00	na	--	3.6E+00	2.7E+00	na	--	--	--	--	--	--	--	--	--	3.6E+00	2.7E+00	na	--
Cyanide, Free	0	2.2E+01	5.2E+00	na	1.6E+04	2.2E+01	5.2E+00	na	1.6E+04	--	--	--	--	--	--	--	--	2.2E+01	5.2E+00	na	1.6E+04
DDD ^C	0	--	--	na	3.1E-03	--	--	na	3.1E-03	--	--	--	--	--	--	--	--	--	--	na	3.1E-03
DDE ^C	0	--	--	na	2.2E-03	--	--	na	2.2E-03	--	--	--	--	--	--	--	--	--	--	na	2.2E-03
DDT ^C	0	1.1E+00	1.0E-03	na	2.2E-03	1.1E+00	1.0E-03	na	2.2E-03	--	--	--	--	--	--	--	--	1.1E+00	1.0E-03	na	2.2E-03
Demeton	0	--	1.0E-01	na	--	--	1.0E-01	na	--	--	--	--	--	--	--	--	--	--	1.0E-01	na	--
Diazinon	0	1.7E-01	1.7E-01	na	--	1.7E-01	1.7E-01	na	--	--	--	--	--	--	--	--	--	1.7E-01	1.7E-01	na	--
Dibenz(a,h)anthracene ^C	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	na	1.8E-01
1,2-Dichlorobenzene	0	--	--	na	1.3E+03	--	--	na	1.3E+03	--	--	--	--	--	--	--	--	--	--	na	1.3E+03
1,3-Dichlorobenzene	0	--	--	na	9.6E+02	--	--	na	9.6E+02	--	--	--	--	--	--	--	--	--	--	na	9.6E+02
1,4-Dichlorobenzene	0	--	--	na	1.9E+02	--	--	na	1.9E+02	--	--	--	--	--	--	--	--	--	--	na	1.9E+02
3,3-Dichlorobenzidine ^C	0	--	--	na	2.8E-01	--	--	na	2.8E-01	--	--	--	--	--	--	--	--	--	--	na	2.8E-01
Dichlorobromomethane ^C	0	--	--	na	1.7E+02	--	--	na	1.7E+02	--	--	--	--	--	--	--	--	--	--	na	1.7E+02
1,2-Dichloroethane ^C	0	--	--	na	3.7E+02	--	--	na	3.7E+02	--	--	--	--	--	--	--	--	--	--	na	3.7E+02
1,1-Dichloroethylene	0	--	--	na	7.1E+03	--	--	na	7.1E+03	--	--	--	--	--	--	--	--	--	--	na	7.1E+03
1,2-trans-dichloroethylene	0	--	--	na	1.0E+04	--	--	na	1.0E+04	--	--	--	--	--	--	--	--	--	--	na	1.0E+04
2,4-Dichlorophenol	0	--	--	na	2.9E+02	--	--	na	2.9E+02	--	--	--	--	--	--	--	--	--	--	na	2.9E+02
2,4-Dichlorophenoxy acetic acid (2,4-D)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
1,2-Dichloropropane ^C	0	--	--	na	1.5E+02	--	--	na	1.5E+02	--	--	--	--	--	--	--	--	--	--	na	1.5E+02
1,3-Dichloropropene ^C	0	--	--	na	2.1E+02	--	--	na	2.1E+02	--	--	--	--	--	--	--	--	--	--	na	2.1E+02
Dieldrin ^C	0	2.4E-01	5.6E-02	na	5.4E-04	2.4E-01	5.6E-02	na	5.4E-04	--	--	--	--	--	--	--	--	2.4E-01	5.6E-02	na	5.4E-04
Diethyl Phthalate	0	--	--	na	4.4E+04	--	--	na	4.4E+04	--	--	--	--	--	--	--	--	--	--	na	4.4E+04
2,4-Dimethylphenol	0	--	--	na	8.5E+02	--	--	na	8.5E+02	--	--	--	--	--	--	--	--	--	--	na	8.5E+02
Dimethyl Phthalate	0	--	--	na	1.1E+06	--	--	na	1.1E+06	--	--	--	--	--	--	--	--	--	--	na	1.1E+06
Di-n-Butyl Phthalate	0	--	--	na	4.5E+03	--	--	na	4.5E+03	--	--	--	--	--	--	--	--	--	--	na	4.5E+03
2,4 Dinitrophenol	0	--	--	na	5.3E+03	--	--	na	5.3E+03	--	--	--	--	--	--	--	--	--	--	na	5.3E+03
2-Methyl-4,6-Dinitrophenol	0	--	--	na	2.8E+02	--	--	na	2.8E+02	--	--	--	--	--	--	--	--	--	--	na	2.8E+02
2,4-Dinitrotoluene ^C	0	--	--	na	3.4E+01	--	--	na	3.4E+01	--	--	--	--	--	--	--	--	--	--	na	3.4E+01
Dioxin 2,3,7,8- tetrachlorodibenzo-p-dioxin	0	--	--	na	5.1E-08	--	--	na	5.1E-08	--	--	--	--	--	--	--	--	--	--	na	5.1E-08
1,2-Diphenylhydrazine ^C	0	--	--	na	2.0E+00	--	--	na	2.0E+00	--	--	--	--	--	--	--	--	--	--	na	2.0E+00
Alpha-Endosulfan	0	2.2E-01	5.6E-02	na	8.9E+01	2.2E-01	5.6E-02	na	8.9E+01	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	na	8.9E+01
Beta-Endosulfan	0	2.2E-01	5.6E-02	na	8.9E+01	2.2E-01	5.6E-02	na	8.9E+01	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	na	8.9E+01
Alpha + Beta Endosulfan	0	2.2E-01	5.6E-02	--	--	2.2E-01	5.6E-02	--	--	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	--	--
Endosulfan Sulfate	0	--	--	na	8.9E+01	--	--	na	8.9E+01	--	--	--	--	--	--	--	--	--	--	na	8.9E+01
Endrin	0	8.6E-02	3.6E-02	na	6.0E-02	8.6E-02	3.6E-02	na	6.0E-02	--	--	--	--	--	--	--	--	8.6E-02	3.6E-02	na	6.0E-02
Endrin Aldehyde	0	--	--	na	3.0E-01	--	--	na	3.0E-01	--	--	--	--	--	--	--	--	--	--	na	3.0E-01

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Ethylbenzene	0	--	--	na	2.1E+03	--	--	na	2.1E+03	--	--	--	--	--	--	--	--	--	--	na	2.1E+03
Fluoranthene	0	--	--	na	1.4E+02	--	--	na	1.4E+02	--	--	--	--	--	--	--	--	--	--	na	1.4E+02
Fluorene	0	--	--	na	5.3E+03	--	--	na	5.3E+03	--	--	--	--	--	--	--	--	--	--	na	5.3E+03
Foaming Agents	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Guthion	0	--	1.0E-02	na	--	--	1.0E-02	na	--	--	--	--	--	--	--	--	--	--	1.0E-02	na	--
Heptachlor ^C	0	5.2E-01	3.8E-03	na	7.9E-04	5.2E-01	3.8E-03	na	7.9E-04	--	--	--	--	--	--	--	--	5.2E-01	3.8E-03	na	7.9E-04
Heptachlor Epoxide ^C	0	5.2E-01	3.8E-03	na	3.9E-04	5.2E-01	3.8E-03	na	3.9E-04	--	--	--	--	--	--	--	--	5.2E-01	3.8E-03	na	3.9E-04
Hexachlorobenzene ^C	0	--	--	na	2.9E-03	--	--	na	2.9E-03	--	--	--	--	--	--	--	--	--	--	na	2.9E-03
Hexachlorobutadiene ^C	0	--	--	na	1.8E+02	--	--	na	1.8E+02	--	--	--	--	--	--	--	--	--	--	na	1.8E+02
Hexachlorocyclohexane																					
Alpha-BHC ^C	0	--	--	na	4.9E-02	--	--	na	4.9E-02	--	--	--	--	--	--	--	--	--	--	na	4.9E-02
Hexachlorocyclohexane																					
Beta-BHC ^C	0	--	--	na	1.7E-01	--	--	na	1.7E-01	--	--	--	--	--	--	--	--	--	--	na	1.7E-01
Hexachlorocyclohexane																					
Gamma-BHC ^C (Lindane)	0	9.5E-01	na	na	1.8E+00	9.5E-01	--	na	1.8E+00	--	--	--	--	--	--	--	--	9.5E-01	--	na	1.8E+00
Hexachlorocyclopentadiene	0	--	--	na	1.1E+03	--	--	na	1.1E+03	--	--	--	--	--	--	--	--	--	--	na	1.1E+03
Hexachloroethane ^C	0	--	--	na	3.3E+01	--	--	na	3.3E+01	--	--	--	--	--	--	--	--	--	--	na	3.3E+01
Hydrogen Sulfide	0	--	2.0E+00	na	--	--	2.0E+00	na	--	--	--	--	--	--	--	--	--	--	2.0E+00	na	--
Indeno (1,2,3-cd) pyrene ^C	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	na	1.8E-01
Iron	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Isophorone ^C	0	--	--	na	9.6E+03	--	--	na	9.6E+03	--	--	--	--	--	--	--	--	--	--	na	9.6E+03
Kepone	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	--	0.0E+00	na	--
Lead	0	2.0E+01	2.3E+00	na	--	2.0E+01	2.3E+00	na	--	--	--	--	--	--	--	--	--	2.0E+01	2.3E+00	na	--
Malathion	0	--	1.0E-01	na	--	--	1.0E-01	na	--	--	--	--	--	--	--	--	--	--	1.0E-01	na	--
Manganese	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Mercury	0	1.4E+00	7.7E-01	--	--	1.4E+00	7.7E-01	--	--	--	--	--	--	--	--	--	--	1.4E+00	7.7E-01	--	--
Methyl Bromide	0	--	--	na	1.5E+03	--	--	na	1.5E+03	--	--	--	--	--	--	--	--	--	--	na	1.5E+03
Methylene Chloride ^C	0	--	--	na	5.9E+03	--	--	na	5.9E+03	--	--	--	--	--	--	--	--	--	--	na	5.9E+03
Methoxychlor	0	--	3.0E-02	na	--	--	3.0E-02	na	--	--	--	--	--	--	--	--	--	--	3.0E-02	na	--
Mirex	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	--	0.0E+00	na	--
Nickel	0	5.6E+01	6.3E+00	na	4.6E+03	5.6E+01	6.3E+00	na	4.6E+03	--	--	--	--	--	--	--	--	5.6E+01	6.3E+00	na	4.6E+03
Nitrate (as N)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Nitrobenzene	0	--	--	na	6.9E+02	--	--	na	6.9E+02	--	--	--	--	--	--	--	--	--	--	na	6.9E+02
N-Nitrosodimethylamine ^C	0	--	--	na	3.0E+01	--	--	na	3.0E+01	--	--	--	--	--	--	--	--	--	--	na	3.0E+01
N-Nitrosodiphenylamine ^C	0	--	--	na	6.0E+01	--	--	na	6.0E+01	--	--	--	--	--	--	--	--	--	--	na	6.0E+01
N-Nitrosodi-n-propylamine ^C	0	--	--	na	5.1E+00	--	--	na	5.1E+00	--	--	--	--	--	--	--	--	--	--	na	5.1E+00
Nonylphenol	0	2.8E+01	6.6E+00	--	--	2.8E+01	6.6E+00	na	--	--	--	--	--	--	--	--	--	2.8E+01	6.6E+00	na	--
Parathion	0	6.5E-02	1.3E-02	na	--	6.5E-02	1.3E-02	na	--	--	--	--	--	--	--	--	--	6.5E-02	1.3E-02	na	--
PCB Total ^C	0	--	1.4E-02	na	6.4E-04	--	1.4E-02	na	6.4E-04	--	--	--	--	--	--	--	--	--	1.4E-02	na	6.4E-04
Pentachlorophenol ^C	0	7.9E+00	6.1E+00	na	3.0E+01	7.9E+00	6.1E+00	na	3.0E+01	--	--	--	--	--	--	--	--	7.9E+00	6.1E+00	na	3.0E+01
Phenol	0	--	--	na	8.6E+05	--	--	na	8.6E+05	--	--	--	--	--	--	--	--	--	--	na	8.6E+05
Pyrene	0	--	--	na	4.0E+03	--	--	na	4.0E+03	--	--	--	--	--	--	--	--	--	--	na	4.0E+03
Radionuclides	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Gross Alpha Activity																					
(pCi/L)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Beta and Photon Activity																					
(mrem/yr)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Radium 226 + 228 (pCi/L)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Uranium (ug/l)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Selenium, Total Recoverable	0	2.0E+01	5.0E+00	na	4.2E+03	2.0E+01	5.0E+00	na	4.2E+03	--	--	--	--	--	--	--	--	2.0E+01	5.0E+00	na	4.2E+03
Silver	0	3.2E-01	--	na	--	3.2E-01	--	na	--	--	--	--	--	--	--	--	--	3.2E-01	--	na	--
Sulfate	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
1,1,2,2-Tetrachloroethane ^C	0	--	--	na	4.0E+01	--	--	na	4.0E+01	--	--	--	--	--	--	--	--	--	--	na	4.0E+01
Tetrachloroethylene ^C	0	--	--	na	3.3E+01	--	--	na	3.3E+01	--	--	--	--	--	--	--	--	--	--	na	3.3E+01
Thallium	0	--	--	na	4.7E-01	--	--	na	4.7E-01	--	--	--	--	--	--	--	--	--	--	na	4.7E-01
Toluene	0	--	--	na	6.0E+03	--	--	na	6.0E+03	--	--	--	--	--	--	--	--	--	--	na	6.0E+03
Total dissolved solids	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Toxaphene ^C	0	7.3E-01	2.0E-04	na	2.8E-03	7.3E-01	2.0E-04	na	2.8E-03	--	--	--	--	--	--	--	--	7.3E-01	2.0E-04	na	2.8E-03
Tributyltin	0	4.6E-01	7.2E-02	na	--	4.6E-01	7.2E-02	na	--	--	--	--	--	--	--	--	--	4.6E-01	7.2E-02	na	--
1,2,4-Trichlorobenzene	0	--	--	na	7.0E+01	--	--	na	7.0E+01	--	--	--	--	--	--	--	--	--	--	na	7.0E+01
1,1,2-Trichloroethane ^C	0	--	--	na	1.6E+02	--	--	na	1.6E+02	--	--	--	--	--	--	--	--	--	--	na	1.6E+02
Trichloroethylene ^C	0	--	--	na	3.0E+02	--	--	na	3.0E+02	--	--	--	--	--	--	--	--	--	--	na	3.0E+02
2,4,6-Trichlorophenol ^C	0	--	--	na	2.4E+01	--	--	na	2.4E+01	--	--	--	--	--	--	--	--	--	--	na	2.4E+01
2-(2,4,5-Trichlorophenoxy) propionic acid (Silvex)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Vinyl Chloride ^C	0	--	--	na	2.4E+01	--	--	na	2.4E+01	--	--	--	--	--	--	--	--	--	--	na	2.4E+01
Zinc	0	3.6E+01	3.6E+01	na	2.6E+04	3.6E+01	3.6E+01	na	2.6E+04	--	--	--	--	--	--	--	--	3.6E+01	3.6E+01	na	2.6E+04

Notes:

- All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise
- Discharge flow is highest monthly average or Form 2C maximum for Industries and design flow for Municipals
- Metals measured as Dissolved, unless specified otherwise
- "C" indicates a carcinogenic parameter
- Regular WLAs are mass balances (minus background concentration) using the % of stream flow entered above under Mixing Information.
Antidegradation WLAs are based upon a complete mix.
- Antideg. Baseline = (0.25(WQC - background conc.) + background conc.) for acute and chronic
= (0.1(WQC - background conc.) + background conc.) for human health
- WLAs established at the following stream flows: 1Q10 for Acute, 30Q10 for Chronic Ammonia, 7Q10 for Other Chronic, 30Q5 for Non-carcinogens and Harmonic Mean for Carcinogens. To apply mixing ratios from a model set the stream flow equal to (mixing ratio - 1), effluent flow equal to 1 and 100% mix.

Metal	Target Value (SSTV)
Antimony	6.4E+02
Arsenic	9.0E+01
Barium	na
Cadmium	2.3E-01
Chromium III	1.4E+01
Chromium VI	6.4E+00
Copper	1.5E+00
Iron	na
Lead	1.4E+00
Manganese	na
Mercury	4.6E-01
Nickel	3.8E+00
Selenium	3.0E+00
Silver	1.3E-01
Zinc	1.4E+01

Note: do not use QL's lower than the minimum QL's provided in agency guidance

MSTRANTI DATA SOURCE REPORT

Stream information	
Mean Hardness	Because the receiving stream is considered to consist entirely of effluent, all stream information is reflective of effluent information identified below.
90% Temperature (annual)	
90% Temperature (wet season)	
90% Maximum pH	
10% Maximum pH	
Tier Designation	Tier Determination (Item 14 in Fact Sheet)
Stream Flows	
All Data	During low flow conditions, the stream consists entirely of effluent.
Mixing Information	
All Data	Mixing is not available based on stream flows.
Effluent Information	
Mean Hardness	Permittee specified in email correspondence an expected effluent hardness of 25 mg/L.
90% Temperature (annual)	The VPDES application states that summer temperatures are expected to average 30°C with a possible maximum of 35°C. 32°C used as conservative estimate in absence of actual data.
90% Maximum pH	Permittee specified in email correspondence an expected effluent pH of 7.2 S.U. With relatively homogeneous nature of landfill leachate, adjusted +/- 0.3 S.U. to estimate 90 th and 10 th percentiles.
10% Maximum pH	
Discharge flow	Permit application: Maximum design flow specified in permit application.

Data Location:

Representative Effluent Data – Attachment D

Flow Frequency Memo – Attachment A

6/24/2014 8:49:43 AM

Facility = Atlantic Waste Disposal Inc

Chemical = Ammonia

Chronic averaging period = 30

WLAa = 19.9

WLAc = 1.41

Q.L. = 1

samples/mo. = 1

samples/wk. = 1

Summary of Statistics:

observations = 1

Expected Value = 4.9

Variance = 8.6436

C.V. = 0.6

97th percentile daily values = 11.9237

97th percentile 4 day average = 8.15257

97th percentile 30 day average = 5.90966

< Q.L. = 0

Model used = BPJ Assumptions, type 2 data

A limit is needed based on Chronic Toxicity

Maximum Daily Limit = 2.844914831717

Average Weekly limit = 2.844914831717

Average Monthly Limit = 2.844914831717

The data are:

4.9

9/19/2014 3:39:10 PM

Facility = Atlantic Waste Disposal
Chemical = Ammonia - pH and Temp Limited
Chronic averaging period = 30
WLAa = 26.2
WLAc = 1.87
Q.L. = 1
samples/mo. = 1
samples/wk. = 1

Summary of Statistics:

observations = 1
Expected Value = 4.9
Variance = 8.6436
C.V. = 0.6
97th percentile daily values = 11.9237
97th percentile 4 day average = 8.15257
97th percentile 30 day average = 5.90966
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Chronic Toxicity
Maximum Daily Limit = 3.7730430746885
Average Weekly limit = 3.7730430746885
Average Monthly Limit = 3.7730430746885

The data are:

4.9

2/3/2014 3:13:34 PM

Facility = Atlantic Waste Disposal

Chemical = total recoverable zinc

Chronic averaging period = 4

WLAa = 36

WLAc = 36

Q.L. = 1

samples/mo. = 1

samples/wk. = 1

Summary of Statistics:

observations = 1

Expected Value = 110

Variance = 4356

C.V. = 0.6

97th percentile daily values = 267.675

97th percentile 4 day average = 183.016

97th percentile 30 day average = 132.665

< Q.L. = 0

Model used = BPJ Assumptions, type 2 data

A limit is needed based on Acute Toxicity

Maximum Daily Limit = 36

Average Weekly limit = 36

Average Monthly Limit = 36

The data are:

110

MEMORANDUM

DEPARTMENT OF ENVIRONMENTAL QUALITY *Piedmont Regional Office*

4949-A Cox Road, Glen Allen, VA 23060-6296

804/527-5020

SUBJECT: Stream Sanitation Analysis – Black Swamp
Sussex County Landfill (VA0092797)

TO: Brad Ricks

FROM: Jennifer Palmore, P.G.

DATE: July 28, 2014

REVISED: September 10, 2014

A request for a stream sanitation analysis for the Atlantic Waste Disposal's Sussex County Landfill was received on 7/17/14. The request was subsequently modified on 9/3/14.

The landfill is located off of Route 602 near Waverly in Sussex County. The facility currently pump-and-hauls the landfill leachate to the Sussex Service Authority's Black Swamp Regional WWTP (VA0088978); however, due to restrictions by the WWTP, the landfill has applied for their own VPDES permit. The landfill intends to construct a reverse osmosis plant to treat the leachate. They have applied for an initial discharge of 0.20 MGD average/0.30 MGD maximum, but have also requested that the permit allow an expansion flow tier up to 0.5 MGD.

The proposed outfall will be located at the headwaters of Black Swamp at rivermile 5ABLS004.57 (see attached flow frequency memorandum - Palmore, 1/27/2014). Black Swamp is considered a Class VII swampwater. The discharge will flow directly into the upstream side of an existing on-site stormwater retention basin which then discharges into an intermittent channel that flows towards the southeast. An aerial photograph is included below. Limits will be applied as the outfall enters the pond.

Ponds are considered unmodelable using Regional Model 4.1; therefore, effluent limits from A.J. Anthony's March 9, 1987 memorandum "Advisory Notification of Effluent Limits for Swamp and Marsh Waters" are recommended. The limits are considered a "self-sustaining effluent" that will maintain water quality standards. In addition, a minimum dissolved oxygen limit of 5.0 mg/L is suggested to protect the stream channel below the pond.

Q = 0.20 MGD
cBOD₅ = 10 mg/L
TKN = 3.0 mg/L
DO (min) = 5.0 mg/L

Q = 0.5 MGD
cBOD₅ = 10 mg/L
TKN = 3.0 mg/L
DO (min) = 5.0 mg/L

If you have any questions or need any additional information, please do not hesitate to contact me.



Attachment E
Federal Effluent Limitation Guidelines
40 CFR 445

ELECTRONIC CODE OF FEDERAL REGULATIONS

e-CFR Data is current as of January 16, 2014

Title 40: Protection of Environment

PART 445—LANDFILLS POINT SOURCE CATEGORY

Contents

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Subpart A—RCRA Subtitle C Hazardous Waste Landfill

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- [§445.13 Effluent limitations representing the degree of effluent reduction attainable by the application of best available technology economically achievable \(BAT\).](#)
- [§445.14 New source performance standards \(NSPS\).](#)

Subpart B—RCRA Subtitle D Non-Hazardous Waste Landfill

- [§445.20 Applicability.](#)
- [§445.21 Effluent limitations attainable by the application of the best practicable control technology currently available \(BPT\).](#)
- [§445.22 Effluent limitations attainable by the application of the best conventional pollutant control technology \(BCT\).](#)
- [§445.23 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable \(BAT\).](#)
- [§445.24 New source performance standards \(NSPS\).](#)

AUTHORITY: Secs. 301, 304, 306, 307, 308, 402 and 501 of the Clean Water Act, as amended (33 U.S.C. 1311, 1314, 1316, 1317, 1318, 1342 and 1361)

SOURCE: 65 FR 3048, Jan. 19, 2000, unless otherwise noted.

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§445.1 General applicability.

(a) As defined more specifically in each subpart and except as provided in paragraphs (b) through (h) of this section, this part applies to discharges of wastewater from landfill units.

(b) The provisions of this part do not apply to wastewater discharges from land application or land treatment units, surface impoundments, underground injection wells, waste piles, salt dome formations, salt bed formations, underground mines or caves as these terms are defined in 40 CFR 257.2 and 260.10.

(c) The provisions of this part do not apply to wastewater generated off-site of a landfill facility, including wastewater generated off-site from washing vehicles or from waste transfer stations.

(d) The provisions of this part do not apply to discharges of contaminated ground water or wastewater from recovery pumping wells.

(e) This part does not apply to discharges of landfill wastewater from landfills operated in conjunction with other industrial or commercial operations when the landfill only receives wastes generated by the industrial or commercial operation directly associated with the landfill.

(f) This part does not apply to discharges of landfill wastewater from landfills operated in conjunction with other industrial or commercial operations when the landfill receives wastes generated by the industrial or commercial operation directly associated with the landfill and also receives other wastes provided the other wastes received for disposal are generated by a facility that is subject to the same provisions in 40 CFR subchapter N as the industrial or commercial operation or the other wastes received are of similar nature to the wastes generated by the industrial or commercial operation.

(g) This part does not apply to landfills operated in conjunction with Centralized Waste Treatment (CWT) facilities subject to 40 CFR part 437 so long as the CWT facility commingles the landfill wastewater with other non-landfill wastewater for discharge. A landfill directly associated with a CWT facility is subject to this part if the CWT facility discharges landfill wastewater separately from other CWT wastewater or commingles the wastewater from its landfill only with wastewater from other landfills.

(h) This part does not apply to landfills operated in conjunction with other industrial or commercial operations when the landfill receives wastes from public service activities so long as the company owning the landfill does not receive a fee or other remuneration for the disposal service.

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§445.2 General definitions.

In addition to the definitions set forth in 40 CFR 122.2, 257.2, 258.2, 264.10, 265.10, 401.11, and 403.3 the following definitions apply to this part:

(a) *Contaminated ground water* means water below the land surface in the zone of saturation which has been contaminated by activities associated with waste disposal.

(b) *Contaminated storm water* means storm water which comes in direct contact with landfill wastes, the waste handling and treatment areas, or landfill wastewater as defined in paragraph (f) of this section. Some specific areas of a landfill that may produce contaminated storm water include (but are not limited to): the open face of an active landfill with exposed waste (no cover added); the areas around wastewater treatment operations; trucks, equipment or machinery that has been in direct contact with the waste; and waste dumping areas.

(c) *Landfill* directly associated with an industrial or commercial operation means:

(1) A landfill located on the same site as industrial or commercial operations; and

(2) A landfill not located on the same site as the industrial or commercial operations (off-site), but “wholly-owned” by the industrial or commercial facility and primarily dedicated to receiving waste from the related industrial or commercial facility.

(d) *Facility* means all contiguous property owned, operated, leased or under the control of the same person or entity.

(e) *Landfill unit* means an area of land or an excavation in which wastes are placed for permanent disposal, that is not a land application or land treatment unit, surface impoundment, underground

injection well, waste pile, salt dome formation, a salt bed formation, an underground mine or a cave as these terms are defined in 40 CFR 257.2, 258.2 and 264.10.

(f) *Landfill wastewater* means all wastewater associated with, or produced by, landfilling activities except for sanitary wastewater, non-contaminated storm water, contaminated ground water, and wastewater from recovery pumping wells. Landfill wastewater includes, but is not limited to, leachate, gas collection condensate, drained free liquids, laboratory derived wastewater, contaminated storm water and contact washwater from washing truck, equipment, and railcar exteriors and surface areas which have come in direct contact with solid waste at the landfill facility.

(g) *Non-contaminated storm water* means storm water which does not come in direct contact with landfill wastes, the waste handling and treatment areas, or landfill wastewater that is defined in paragraph (f) of this section. Non-contaminated storm water includes storm water which flows off the cap, cover, intermediate cover, daily cover, and/or final cover of the landfill.

(h) *Off-site* means outside the boundaries of a facility.

(i) *On-site* means within the boundaries of a facility.

(j) *Public service* means the provision of landfill waste disposal services to individual members of the general public, publicly-owned organizations (schools, universities, government agencies, municipalities) and not-for-profit organizations for which the landfill does not receive a fee or other remuneration.

(k) The regulated parameters for this part, numbered (P) and listed with approved methods of analysis in Table 1B at 40 CFR 136.3, are defined as follows:

(1) *Ammonia (as N)* means ammonia reported as nitrogen. P4.

(2) *BOD₅* means 5-day biochemical oxygen demand. P9.

(3) *Arsenic* means total arsenic. P6.

(4) *Chromium* means total chromium. P19.

(5) *Zinc* means total zinc. P75.

(l) The regulated parameters for this part, numbered (P) and listed with approved methods of analysis in Table 1C at 40 CFR 136.3, are as follows:

(1) Naphthalene. P68.

(2) Phenol. P85.

(m) The regulated parameters for this part listed with approved methods of analysis in the attachments to Methods 625 and 1625B in appendix A at 40 CFR part 136 are as follows:

(1) Aniline.

(2) Benzoic acid.

(3) p-Cresol.

(4) Pyridine.

(5) a-Terpineol.

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§445.3 General pretreatment standards.

Any source subject to this part that introduces wastewater pollutants into a publicly owned treatment works (POTW) must comply with 40 CFR part 403.

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Subpart A—RCRA Subtitle C Hazardous Waste Landfill

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§445.10 Applicability.

Except as provided in §445.1, this subpart applies to discharges of wastewater from landfills subject to the provisions of 40 CFR part 264, *Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities, Subpart N-(Landfills)*; and 40 CFR part 265, *Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities, Subpart N-(Landfills)*.

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§445.11 Effluent limitations attainable by the application of the best practicable control technology currently available (BPT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations which represent the application of BPT:

EFFLUENT LIMITATIONS

Regulated parameter	Maximum daily ¹	Maximum monthly avg. ¹
BOD ₅	220	56
TSS	88	27
Ammonia (as N)	10	4.9
α-Terpineol	0.042	0.019
Aniline	0.024	0.015
Benzoic acid	0.119	0.073
Naphthalene	0.059	0.022
p-Cresol	0.024	0.015
Phenol	0.048	0.029
Pyridine	0.072	0.025
Arsenic	1.1	0.54
Chromium	1.1	0.46
Zinc	0.535	0.296
pH	(²)	(²)

¹Milligrams per liter (mg/L, ppm).

²Within the range 6 to 9.

[65 FR 3048, Jan. 19, 2000; 65 FR 14344, Mar. 16, 2000]

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§445.12 Effluent limitations attainable by the application of the best conventional pollutant control technology (BCT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations which represent the application of BCT: Limitations for BOD₅, TSS and pH are the same as the corresponding limitations specified in §445.11.

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§445.13 Effluent limitations representing the degree of effluent reduction attainable by the application of best available technology economically achievable (BAT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations which represent the application of BAT: Limitations for ammonia (as N), α -terpineol, aniline, benzoic acid, naphthalene, p-cresol, phenol, pyridine, arsenic, chromium and zinc are the same as the corresponding limitations specified in §445.11.

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§445.14 New source performance standards (NSPS).

Any new source subject to this subpart must achieve the following performance standards: Standards are the same as those specified in §445.11.

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Subpart B—RCRA Subtitle D Non-Hazardous Waste Landfill

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§445.20 Applicability.

Except as provided in §445.1, this subpart applies to discharges of wastewater from landfills subject to the provisions of 40 CFR part 258, *Criteria for Municipal Solid Waste Landfills*; and 40 CFR part 257, *Criteria for Classification of Solid Waste Disposal Facilities and Practices*.

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§445.21 Effluent limitations attainable by the application of the best practicable control technology currently available (BPT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations which represent the application of BPT:

EFFLUENT LIMITATIONS

Regulated parameter	Maximum daily¹	Maximum monthly avg.¹
BOD	140	37
TSS	88	27
Ammonia (as N)	10	4.9
α -Terpineol	0.033	0.016
Benzoic acid	0.12	0.071
p-Cresol	0.025	0.014
Phenol	0.026	0.015
Zinc	0.20	0.11

pH

(2)

(2)

¹Milligrams per liter (mg/L, ppm)

²Within the range 6 to 9.

[65 FR 3048, Jan. 19, 2000; 65 FR 14344, Mar. 16, 2000]

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§445.22 Effluent limitations attainable by the application of the best conventional pollutant control technology (BCT).

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations which represent the application of BCT: Limitations for BOD₅, TSS and pH are the same as the corresponding limitations specified in §445.21.

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§445.23 Effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).

Except as provided in 40 CFR 125.30-125.32, any existing point source subject to this subpart must achieve the following effluent limitations which represent the application of BAT: Limitations for ammonia (as N), α-terpineol, benzoic acid, p-cresol, phenol and zinc are the same as the corresponding limitations specified in §445.21.

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§445.24 New source performance standards (NSPS).

Any new source subject to this subpart must achieve the following performance standards: Standards are the same as those specified in §445.21.

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For questions or comments regarding e-CFR editorial content, features, or design, email ecfr@nara.gov.
For questions concerning e-CFR programming and delivery issues, email webteam@gpo.gov.

Attachment F
Whole Effluent Toxicity Evaluation

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O									
1	Spreadsheet for determination of WET test endpoints or WET limits																							
2																								
3																								
4	Excel 97			Acute Endpoint/Permit Limit			Use as LC₅₀ in Special Condition, as TU_a on DMR																	
5	Revision Date: 01/10/05																							
6	File: WETLIM10.xls																							
7	(MIX.EXE required also)																							
8				ACUTE			100% =			NOAEC			LC₅₀ = NA			% Use as			NA			TU_a		
9				ACUTE WLA_a			0.3			Note: Inform the permittee that if the mean of the data exceeds this TU _a :			1.0			a limit may result using WLA.EXE								
10																								
11				Chronic Endpoint/Permit Limit			Use as NOEC in Special Condition, as TU_c on DMR																	
12																								
13				CHRONIC			1.462574684 TU _c			NOEC =			69 % Use as			1.44			TU_c					
14				BOTH*			3.000000074 TU _c			NOEC =			34 % Use as			2.94			TU_c					
15				AML			1.462574684 TU _c			NOEC =			69 % Use as			1.44			TU_c					
16	Enter data in the cells with blue type:																							
17	Entry Date:			06/24/14			ACUTE WLA_{a,c}			3			Note: Inform the permittee that if the mean											
18	Facility Name:			AWD			CHRONIC WLA_c			1			of the data exceeds this TU _c :			1.0								
19	VPDES Number:			VA0092797			* Both means acute expressed as chronic						a limit may result using WLA.EXE											
20	Outfall Number:			1																				
21							% Flow to be used from MIX.EXE						Difuser /modeling study?											
22	Plant Flow:			0.25 MGD									Enter Y/N			N								
23	Acute 1Q10:			0 MGD			100 %						Acute			1 :1								
24	Chronic 7Q10:			0 MGD			100 %						Chronic			1 :1								
25																								
26	Are data available to calculate CV? (Y/N)			N			(Minimum of 10 data points, same species, needed)						Go to Page 2											
27	Are data available to calculate ACR? (Y/N)			N			(NOEC<LC50, do not use greater/less than data)						Go to Page 3											
28																								
29																								
30	IWC _a			100 %			Plant flow/plant flow + 1Q10						NOTE: If the IWC_a is >33%, specify the NOAEC = 100% test/endpoint for use											
31	IWC _c			100 %			Plant flow/plant flow + 7Q10																	
32																								
33	Dilution, acute			1			100/IWC _a																	
34	Dilution, chronic			1			100/IWC _c																	
35																								
36	WLA _a			0.3			Instream criterion (0.3 TU _a) X's Dilution, acute																	
37	WLA _c			1			Instream criterion (1.0 TU _c) X's Dilution, chronic																	
38	WLA _{a,c}			3			ACR X's WLA _a - converts acute WLA to chronic units																	
39																								
40	ACR -acute/chronic ratio			10			LC50/NOEC (Default is 10 - if data are available, use tables Page 3)																	
41	CV-Coefficient of variation			0.6			Default of 0.6 - if data are available, use tables Page 2)																	
42	Constants eA			0.4109447			Default = 0.41																	
43	eB			0.6010373			Default = 0.60																	
44	eC			2.4334175			Default = 2.43																	
45	eD			2.4334175			Default = 2.43 (1 samp)			No. of samples: 1						**The Maximum Daily Limit is calculated from the lowest LTA, X's eC. The LTA _{a,c} and MDL using it are driven by the ACR.								
46																								
47	LTA _{a,c}			1.2328341			WLA _{a,c} X's eA																	
48	LTA _c			0.6010373			WLA _c X's eB									Rounded NOEC's %								
49	MDL** with LTA _{a,c}			3.000000074 TU _c			NOEC =			33.333333 (Protects from acute/chronic toxicity)			NOEC =			34 %								
50	MDL** with LTA _c			1.462574684 TU _c			NOEC =			68.372577 (Protects from chronic toxicity)			NOEC =			69 %								
51	AML with lowest LTA			1.462574684 TU _c			NOEC =			68.372577 Lowest LTA X's eD			NOEC =			69								
52																								
53	IF ONLY ACUTE ENDPOINT/LIMIT IS NEEDED, CONVERT MDL FROM TU_c to TU_a																							
54																								
55	MDL with LTA _{a,c}			0.300000007 TU _a			LC50 =			333.333325 %			Use NOAEC=100%			LC50 = NA %								
56	MDL with LTA _c			0.146257468 TU _a			LC50 =			683.725769 %			Use NOAEC=100%			LC50 = NA %								
57																								
58																								

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O				
59																			
60		Page 2 - Follow the directions to develop a site specific CV (coefficient of variation)																	
61																			
62		IF YOU HAVE AT LEAST 10 DATA POINTS THAT ARE QUANTIFIABLE (NOT "<" OR ">") FOR A SPECIES, ENTER THE DATA IN EITHER COLUMN "G" (VERTEBRATE) OR COLUMN "J" (INVERTEBRATE). THE 'CV' WILL BE PICKED UP FOR THE CALCULATIONS BELOW. THE DEFAULT VALUES FOR eA, eB, AND eC WILL CHANGE IF THE 'CV' IS ANYTHING OTHER THAN 0.6.					Vertebrate			Invertebrate									
63							IC ₂₅ Data			IC ₂₅ Data									
64							or			or									
65							LC ₅₀ Data			LN of data		LC ₅₀ Data		LN of data					
66							*****					*****							
67							1					1		0					
68							2					2							
69		3					3												
70		4					4												
71		5					5												
72		6					6												
73		7					7												
74		Coefficient of Variation for effluent tests					8			8									
75							9			9									
76		CV =	0.6 (Default 0.6)				10			10									
77							11			11									
78		δ ² =	0.3074847				12			12									
79		δ =	0.554513029				13			13									
80							14			14									
81		Using the log variance to develop eA					15			15									
82		(P. 100, step 2a of TSD)					16			16									
83		Z = 1.881 (97% probability stat from table)					17			17									
84		A =	-0.88929666				18			18									
85		eA =	0.410944686				19			19									
86							20			20									
87		Using the log variance to develop eB																	
88		(P. 100, step 2b of TSD)				St Dev	NEED DATA	NEED DATA	St Dev	NEED DATA	NEED DATA								
89		δ ₄ ² =	0.086177696			Mean	0	0	Mean	0	0								
90		δ ₄ =	0.293560379			Variance	0	0.000000	Variance	0	0.000000								
91		B =	-0.50909823			CV	0		CV	0									
92		eB =	0.601037335																
93																			
94		Using the log variance to develop eC																	
95		(P. 100, step 4a of TSD)																	
96																			
97		δ ² =	0.3074847																
98		δ =	0.554513029																
99		C =	0.889296658																
100		eC =	2.433417525																
101																			
102		Using the log variance to develop eD																	
103		(P. 100, step 4b of TSD)																	
104		n =	1			This number will most likely stay as "1", for 1 sample/month.													
105		δ _n ² =	0.3074847																
106		δ _n =	0.554513029																
107		D =	0.889296658																
108		eD =	2.433417525																
109																			



	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	
110																
111	Page 3 - Follow directions to develop a site specific ACR (Acute to Chronic Ratio)															
112																
113	To determine Acute/Chronic Ratio (ACR), insert usable data below. Usable data is defined as valid paired test results,															
114	acute and chronic, tested at the same temperature, same species. The chronic NOEC must be less than the acute															
115	LC ₅₀ , since the ACR divides the LC ₅₀ by the NOEC. LC ₅₀ 's >100% should not be used.															
116																
117	Table 1. ACR using Vertebrate data															
118																
119																
120		Set #	LC₅₀	NOEC	Test ACR	Logarithm	Geomean	Antilog	ACR to Use							
121		1	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	NO DATA							
122		2	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	NO DATA							
123		3	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	NO DATA							
124		4	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	NO DATA							
125		5	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	NO DATA							
126		6	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	NO DATA							
127		7	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	NO DATA							
128		8	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	NO DATA							
129		9	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	NO DATA							
130		10	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	NO DATA							
131																
132										ACR for vertebrate data:		0				
133						Table 1. Result:	Vertebrate ACR		0							
134						Table 2. Result:	Invertebrate ACR		0							
135							Lowest ACR		Default to 10							
136																
137		Table 2. ACR using Invertebrate data														
138																
139																
140																
141		Set #	LC₅₀	NOEC	Test ACR	Logarithm	Geomean	Antilog	ACR to Use							
142		1	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	NO DATA							
143		2	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	NO DATA							
144		3	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	NO DATA							
145		4	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	NO DATA							
146		5	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	NO DATA							
147		6	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	NO DATA							
148		7	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	NO DATA							
149		8	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	NO DATA							
150		9	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	NO DATA							
151		10	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	NO DATA							
152										ACR for vertebrate data:		0				
153																
154																
155																
156																
157		DILUTION SERIES TO RECOMMEND														
158		Table 4.														
159						Monitoring		Limit								
160						% Effluent	TUc	% Effluent	TUc							
161						100	1.0									
162								69	1.4492754							
163								0.8306624								
164																
165																
166																
167																
168																
169																
170																
171																
172																

Convert LC₅₀'s and NOEC's to Chronic TU's for use in WLA.EXE

Table 3. **ACR used:** **10**

	Enter LC ₅₀	TUc	Enter NOEC	TUc
1	NO DATA			NO DATA
2	NO DATA			NO DATA
3	NO DATA			NO DATA
4	NO DATA			NO DATA
5	NO DATA			NO DATA
6	NO DATA			NO DATA
7	NO DATA			NO DATA
8	NO DATA			NO DATA
9	NO DATA			NO DATA
10	NO DATA			NO DATA
11	NO DATA			NO DATA
12	NO DATA			NO DATA
13	NO DATA			NO DATA
14	NO DATA			NO DATA
15	NO DATA			NO DATA
16	NO DATA			NO DATA
17	NO DATA			NO DATA
18	NO DATA			NO DATA
19	NO DATA			NO DATA
20	NO DATA			NO DATA

If WLA.EXE determines that an acute limit is needed, you need to convert the TUc answer you get to TUa and then an LC50,

enter it here: **NO DATA** %LC₅₀
NO DATA TUa

Cell: I9

Comment: This is assuming that the data are Type 2 data (none of the data in the data set are censored - "<" or ">").

Cell: K18

Comment: This is assuming that the data are Type 2 data (none of the data in the data set are censored - "<" or ">").

Cell: J22

Comment: Remember to change the "N" to "Y" if you have ratios entered, otherwise, they won't be used in the calculations.

Cell: C40

Comment: If you have entered data to calculate an ACR on page 3, and this is still defaulted to "10", make sure you have selected "Y" in cell E21

Cell: C41

Comment: If you have entered data to calculate an effluent specific CV on page 2, and this is still defaulted to "0.6", make sure you have selected "Y" in cell E20

Cell: L48

Comment: See Row 151 for the appropriate dilution series to use for these NOEC's

Cell: G62

Comment: Vertebrates are:
Pimephales promelas
Oncorhynchus mykiss
Cyprinodon variegatus

Cell: J62

Comment: Invertebrates are:
Ceriodaphnia dubia
Mysidopsis bahia

Cell: C117

Comment: Vertebrates are:

Pimephales promelas
Cyprinodon variegatus

Cell: M119

Comment: The ACR has been picked up from cell C34 on Page 1. If you have paired data to calculate an ACR, enter it in the tables to the left, and make sure you have a "Y" in cell E21 on Page 1. Otherwise, the default of 10 will be used to convert your acute data.

Cell: M121

Comment: If you are only concerned with acute data, you can enter it in the NOEC column for conversion and the number calculated will be equivalent to the TUa. The calculation is the same: $100/\text{NOEC} = \text{TUc}$ or $100/\text{LC50} = \text{TUa}$.

Cell: C138

Comment: Invertebrates are:

Ceriodaphnia dubia
Mysidopsis bahia

Attachment G
NPDES Permit Rating Worksheet

NPDES PERMIT RATING WORK SHEET

NPDES NO. VA0092797

- ☒ Regular Addition
☐ Discretionary Addition
☐ Score change, but no status change
☐ Deletion

Facility Name: Atlantic Waste Disposal Inc

City: Waverly, Va.

Receiving Water: Black Swamp

Reach Number: _____

Is this facility a steam electric power plant (SIC=4911) with one or more of the following characteristics?

1. Power output 500 MW or greater (not using a cooling pond/lake)
2. A nuclear power plant
3. Cooling water discharge greater than 25% of the receiving stream's 7Q10 flow rate

☐ YES; score is 600 (stop here) ☒ NO (continue)

Is this permit for a municipal separate storm sewer serving a population greater than 100,000?

- ☐ YES; score is 700 (stop here)
☒ NO (continue)

FACTOR 1: Toxic Pollutant Potential

PCS SIC Code:

Primary SIC Code: 4953 Refuse Systems Other SIC Codes: none

Industrial Subcategory Code: 1 (Solid Waste Facilities) (Code 000 if no subcategory)

Determine the Toxicity potential from Appendix A. Be sure to use the TOTAL toxicity potential column and check one)

Toxicity Group	Code	Points	Toxicity Group	Code	Points	Toxicity Group	Code	Points
<input type="checkbox"/> No process waste streams	0	0	<input type="checkbox"/> 3.	3	15	<input checked="" type="checkbox"/> 7.	7	35
<input type="checkbox"/> 1.no electroplating	1	5	<input type="checkbox"/> 4.	4	20	<input type="checkbox"/> 8.	8	40
<input type="checkbox"/> 2.	2	10	<input type="checkbox"/> 5.	5	25	<input type="checkbox"/> 9.	9	45
			<input type="checkbox"/> 6.	6	30	<input type="checkbox"/> 10.	10	50

Code Number Checked: 7

Total Points Factor 1: 35

FACTOR 2: Flow/Stream Flow Volume (Complete either Section A or Section B; check only one)

Section A ☒ Wastewater Flow Only Considered

Wastewater Type (See Instructions)	Code	Points
Type I: Flow < 5 MGD	<input type="checkbox"/> 11	0
Flow 5 to 10 MGD	<input type="checkbox"/> 12	10
Flow > 10 to 50 MGD	<input type="checkbox"/> 13	20
Flow > 50 MGD	<input type="checkbox"/> 14	30
Type II: Flow < 1 MGD	<input checked="" type="checkbox"/> 21	10
Flow 1 to 5 MGD	<input type="checkbox"/> 22	20
Flow > 5 to 10 MGD	<input type="checkbox"/> 23	30
Flow > 10 MGD	<input type="checkbox"/> 24	50
Type III: Flow < 1 MGD	<input type="checkbox"/> 31	0
Flow 1 to 5 MGD	<input type="checkbox"/> 32	10
Flow > 5 to 10 MGD	<input type="checkbox"/> 33	20
Flow > 10 MGD	<input type="checkbox"/> 34	30

Section B ☐ Wastewater and Stream Flow Considered

Wastewater Type (See Instructions)	Percent of instream Wastewater Concentration at Receiving Stream Low Flow	Code	Points
Type I/III:	< 10 %	<input type="checkbox"/> 41	0
	10 % to < 50 %	<input type="checkbox"/> 42	10
	> 50 %	<input type="checkbox"/> 43	20
Type II:	< 10 %	<input type="checkbox"/> 51	0
	10 % to <50 %	<input type="checkbox"/> 52	20
	> 50 %	<input type="checkbox"/> 53	30

Code Checked from Section A or B: 21

Total Points Factor 2: 10

FACTOR 3: Conventional Pollutants
(only when limited by the permit)

NPDES NO: VA0092797

A. Oxygen Demanding Pollutant: (check one) ☒ BOD ☐ COD ☐ Other: _____

Permit Limits: (check one)		Code	Points
<input checked="" type="checkbox"/> (62 lbs/day @0.2 MGD)< 100 lbs/day		1	0
<input type="checkbox"/> 100 to 1000 lbs/day		2	5
<input type="checkbox"/> > 1000 to 3000 lbs/day		3	15
<input type="checkbox"/> > 3000 lbs/day		4	20

Code Checked: 1

Points Scored: 0

B. Total Suspended Solids (TSS)

Permit Limits: (check one)		Code	Points
<input checked="" type="checkbox"/> < 100 lbs/day		1	0
<input type="checkbox"/> 100 to 1000 lbs/day		2	5
<input type="checkbox"/> > 1000 to 5000 lbs/day		3	15
<input type="checkbox"/> > 5000 lbs/day		4	20

Code Checked: 1

Points Scored: 0

C. Nitrogen Pollutant: (check one) ☒ Ammonia ☐ Other: _____

Permit Limits: (check one)	Nitrogen Equivalent	Code	Points
<input checked="" type="checkbox"/> < 300 lbs/day		1	0
<input type="checkbox"/> 300 to 1000 lbs/day		2	5
<input type="checkbox"/> > 1000 to 3000 lbs/day		3	15
<input type="checkbox"/> > 3000 lbs/day		4	20

Code Checked: 1

Points Scored: 0

Total Points Factor 3: 0

FACTOR 4: Public Health Impact

Is there a public drinking water supply located within 50 miles downstream of the effluent discharge (this includes any body of water to which the receiving water is a tributary)? A public drinking water supply may include infiltration galleries, or other methods of conveyance that ultimately get water from the above referenced supply.

☒ X (30 miles – Norfolk @ Courtland) YES (If yes, check toxicity potential number below)

☐ NO (If no, go to Factor 5)

Determine the *human health* toxicity potential from Appendix A. Use the same SIC code and subcategory reference as in Factor 1. (Be sure to use the human health toxicity group column ☐ check one below)

Toxicity Group	Code	Points	Toxicity Group	Code	Points	Toxicity Group	Code	Points
<input type="checkbox"/> No process waste streams	0	0	<input type="checkbox"/> 3.	3	0	<input checked="" type="checkbox"/> X 7.	7	15
<input type="checkbox"/> 1.	1	0	<input type="checkbox"/> 4.	4	0	<input type="checkbox"/> 8.	8	20
<input type="checkbox"/> 2.	2	0	<input type="checkbox"/> 5.	5	5	<input type="checkbox"/> 9.	9	25
			<input type="checkbox"/> 6.	6	10	<input type="checkbox"/> 10.	10	30

Code Number Checked: 7

Total Points Factor 4: 15

FACTOR 5: Water Quality Factors

NPDES NO.VA0092797

- A. *Is (or will) one or more of the effluent discharge limits based on water quality factors of the receiving stream (rather than technology-based federal effluent guidelines, or technology-based state effluent guidelines), or has a wasteload allocation been assigned to the discharge:*

		Code	Points
<input checked="" type="checkbox"/>	Yes	1	10
<input type="checkbox"/>	No	2	0

- B. *Is the receiving water in compliance with applicable water quality standards for pollutants that are water quality limited in the permit?*

		Code	Points
<input checked="" type="checkbox"/>	Yes	1	0
<input type="checkbox"/>	No	2	5

- C. *Does the effluent discharged from this facility exhibit the reasonable potential to violate water quality standards due to whole effluent toxicity?*

		Code	Points
<input type="checkbox"/>	Yes	1	10
<input checked="" type="checkbox"/>	No	2	0

Code Number Checked: A 1 B 1 C 2**Points Factor 5:** A 10 + B 0 + C 0 = 10 TOTAL**FACTOR 6: Proximity to Near Coastal Waters**

- A. *Base Score: Enter flow code here (from Factor 2):* 21 *Enter the multiplication factor that corresponds to the flow code:* 0.10

Check appropriate facility HPRI Code (from PCS):

	HPRI#	Code	HPRI Score	Flow Code	Multiplication Factor
<input type="checkbox"/>	1	1	20	11, 31, or 41	0.00
<input type="checkbox"/>	2	2	0	12, 32, or 42	0.05
<input type="checkbox"/>	3	3	30	13, 33, or 43	0.10
<input checked="" type="checkbox"/>	4	4	0	14 or 34	0.15
<input type="checkbox"/>	5	5	20	21 or 51	0.10
				22 or 52	0.30
				23 or 53	0.60
				24	1.00

HPRI code checked: 4Base Score: (HPRI Score) 0 X (Multiplication Factor) 0.1 = 0 (TOTAL POINTS)

- B. *Additional Points* ☐ *NEP Program*

For a facility that has an HPRI code of 3, does the facility discharge to one of the estuaries enrolled in the National Estuary Protection (NEP) program (see instructions) or the Chesapeake Bay?

	Code	Points
<input type="checkbox"/> Yes	1	10
<input type="checkbox"/> No	2	0

- C. *Additional Points* ☐ *Great Lakes Area of Concern*

For a facility that has an HPRI code of 5, does the facility discharge any of the pollutants of concern into one of the Great Lakes' 31 areas of concern (see Instructions)

	Code	Points
<input type="checkbox"/> Yes	1	10
<input type="checkbox"/> No	2	0

Code Number Checked: A 0 B 0 C 0**Points Factor 6:** A 0 + B 0 + C 0 = 0 TOTAL

SCORE SUMMARY

NPDES NO. VA0092797

Factor	Description	Total Points
1	Toxic Pollutant Potential	<u>35</u>
2	Flows/Streamflow Volume	<u>10</u>
3	Conventional Pollutants	<u>0</u>
4	Public Health Impacts	<u>15</u>
5	Water Quality Factors	<u>10</u>
6	Proximity to Near Coastal Waters	<u>0</u>
TOTAL (Factors 1 through 6)		<u>70</u>

S1. Is the total score equal to or greater than 80? ☐ Yes (Facility is a major) ☒ No

S2. If the answer to the above questions is no, would you like this facility to be discretionary major?

☒ No

☐ Yes (Add 500 points to the above score and provide reason below:

Reason:

NEW SCORE: 70

OLD SCORE: N/A

Brad Ricks

Permit Reviewer's Name

(804)527-5129

Phone Number


7/24/2014

Date

Attachment H
Threatened and Endangered Species Evaluation

Commonwealth of Virginia Governor

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VaFWIS Search Report Compiled on 1/31/2014, 4:14:17 PM [Help](#)

within taxa **Fish, Aquatic Molluscs, Other Aquatic Invertebrate Taxa**

Known or likely to occur within a **2 mile radius around point 37,03,41.1 -77,10,01.2** in **183 Sussex County, VA** [View Map of Site Location](#)

[View Map of All Query Results from All Observation Tables](#)

Anadromous Fish Use Streams

N/A

Threatened and Endangered Waters

N/A

Species Observations (8 records , 3 Observations with Threatened or Endangered species) [View Map of All Query Results Species Observations](#)

obsID	class	Date Observed	Observer	N Species			View Map
				Different Species	Highest TE *	Highest Tier **	
20117432	BAEANests	May 18 2011	Watts and Byrd	1	FS	II	Yes
20117381	BAEANests	Mar 23 2011	Watts and Byrd	1	FS	II	Yes
20107252	BAEANests	Apr 18 2010	Watts	1	FS	II	Yes
316512	SppObs	May 31 2006	Rick Browder	5		IV	Yes
426911	SppObs	Dec 1 2004	VCU - INSTAR	5		IV	Yes
339099	SppObs	Oct 9 1997	K. Woodward, M. Luisi, J. Willey	11		IV	Yes
10451	SppObs	Jul 15 1973	Revelle and Strickland	4		IV	Yes
338044	SppObs	Jan 1 1984	MDN-B-NORMAN	2			Yes

Displayed 8 Species Observations

* FE=Federal Endangered; FT=Federal Threatened; SE=State Endangered; ST=State Threatened; FC=Federal Candidate; FS=Federal Species of Concern; CC=Collection Concern

** I=VA Wildlife Action Plan - Tier I - Critical Conservation Need; II=VA Wildlife Action Plan - Tier II - Very High Conservation Need; III=VA Wildlife Action Plan - Tier III - High Conservation Need; IV=VA Wildlife Action Plan - Tier IV - Moderate Conservation Need

Habitat Predicted for Aquatic WAP Tier I & II Species (2 Reaches)[View Map Combined Reaches from Below of Habitat Predicted for WAP Tier I & II Aquatic Species](#)

Stream Name	Tier Species						View Map
	Highest TE [*]	BOVA Code, Status [*] , Tier ^{**} , Common & Scientific Name					
(03010202)	SE	010347	SE	I	Sunfish, blackbanded	Enneacanthus chaetodon	Yes

Warwick Swamp (03010202)	SE	010347	SE	I	Sunfish, blackbanded	Enneacanthus chaetodon	Yes
-----------------------------	----	--------	----	---	------------------------------------------	---------------------------	---------------------

Habitat Predicted for Terrestrial WAP Tier I & II Species

N/A

Compiled on 1/31/2014, 4:14:17 PM | 1519832.0 | report=Options | searchType= R | dist= 3218 | poi= 37.03,41.1 -77.10,01.2 | siteID= null
PixelSize=64; Anadromous=0.02756; Buffer=0.158018; County=0.094781; HU6=0.198797; Impediments=0.028485; Int=0.20053; PublicLands=0.032524; Quad=0.087081; SppObs=0.589398; TEWaters=0.047198; TierReaches=0.125018; Total=1.614964;
Trou=0.0274; huva=0.08996

| Friday, January 31, 2014 4:14:29 PM | [DGIF](#) | [Credits](#) | [Disclaimer](#) | Please view our [privacy policy](#) |
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Tier Reaches Group Warwick Swamp (03010202)

37,03,41.2 -77,10,01.3
is the Search Point

☐ Display Item Location is
at center not at map center

Show Position Rings

☒ Yes ☐ No
1 mile and 1/4 mile at the
Search Point

Show Search Area

☒ Yes ☐ No
2 Search distance miles
radius

Search Point is at
map center

Base Map [Choices](#)

Topography

Map Overlay [Choices](#)

Current List: Position, Search,
Observation

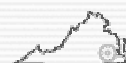
Map Overlay Legend

 Position Rings
1 mile and 1/4
mile at the
Search Point

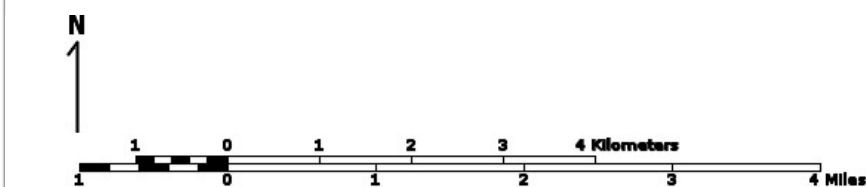
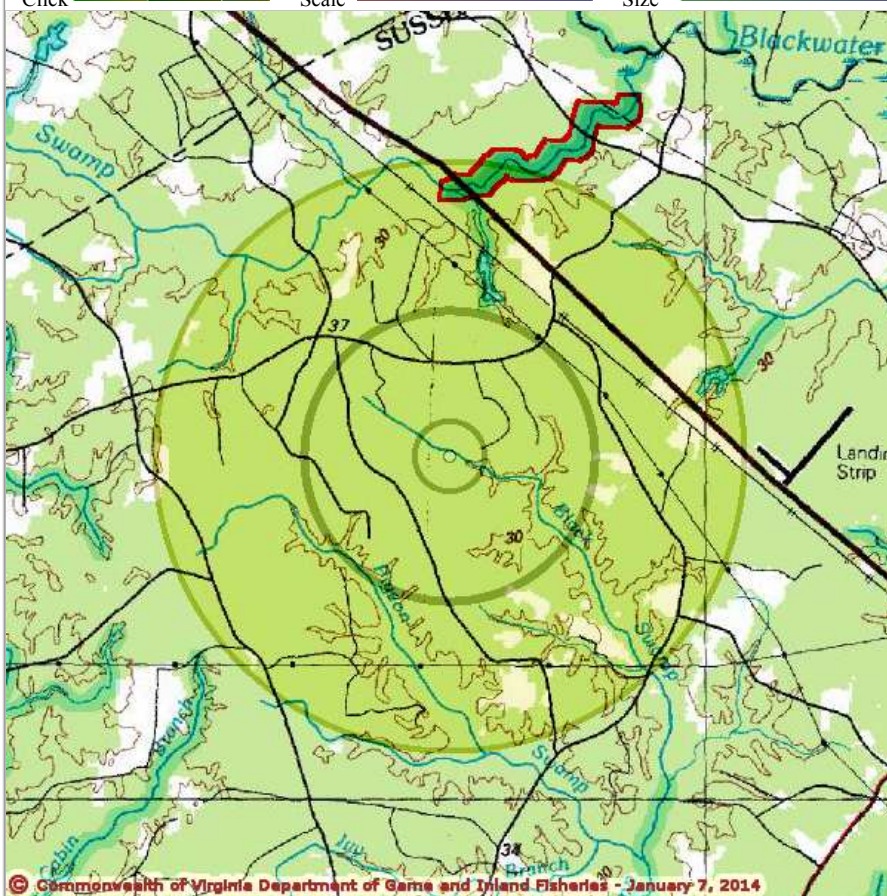
 2 mile radius
Search Area

 Data
Observation Site

Virginia Fish and Wildlife Information Service



Map Click **Pan** **Id** **M** Map Scale **In** **Zoom** **Out** Screen Size **Small** **Size** **Big** [Help](#)



Point of Search 37,03,41.2 -77,10,01.3

Map Location 37,03,41.2 -77,10,01.3

Select **Coordinate System**: ☒ Degrees, Minutes, Seconds Latitude - Longitude

☐ Decimal Degrees Latitude - Longitude

☐ Meters UTM NAD83 East North Zone

☐ Meters UTM NAD27 East North Zone

Base Map source: USGS 1:100,000 topographic maps (see [Microsoft terra-server-usa.com](http://Microsoft.terra-server-usa.com) for details)

Map projection is UTM Zone 18 NAD 1983 with left 302531 and top 4108685. Pixel size is 16 meters. Coordinates displayed are Degrees, Minutes, Seconds North and West. Map is currently displayed as 600 columns by 600 rows for a total of 360000 pixels. The map display represents 9600 meters east to west by 9600 meters north to south for a total of 92.1 square kilometers. The map display represents 31501 feet east to west by 31501 feet north to south for a total of 35.5 square miles.

Topographic maps and Black and white aerial photography for year 1990+-

are from the United States Department of the Interior, United States Geological Survey.
Color aerial photography aquired 2002 is from Virginia Base Mapping Program, Virginia
Geographic Information Network.
Shaded topographic maps are from TOPO! ©2006 National Geographic
<http://www.national.geographic.com/topo>
All other map products are from the Commonwealth of Virginia Department of Game and Inland
Fisheries.

map assembled 2014-01-07 14:41:25 (qa/qc December 5, 2012 8:04 - tn=512779.0
dist=3218.6881)
\$poi=37.0614444 -77.1670278

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Tier Reaches Group (03010202)

37,03,41.2 -77,10,01.3
is the Search Point

Display Item Location is
at center not at map center

Show Position Rings

☒ Yes ☐ No
1 mile and 1/4 mile at the
Search Point

Show Search Area

☒ Yes ☐ No
2 Search distance miles
radius

Search Point is at
map center

Base Map Choices

Topography

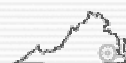
Map Overlay Choices

Current List: Position, Search,
Observation

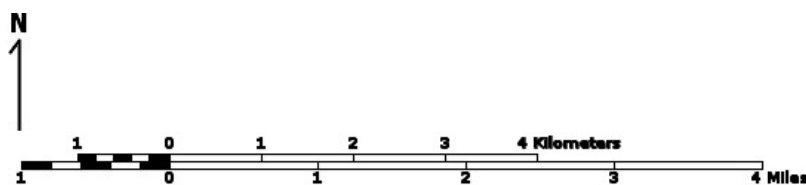
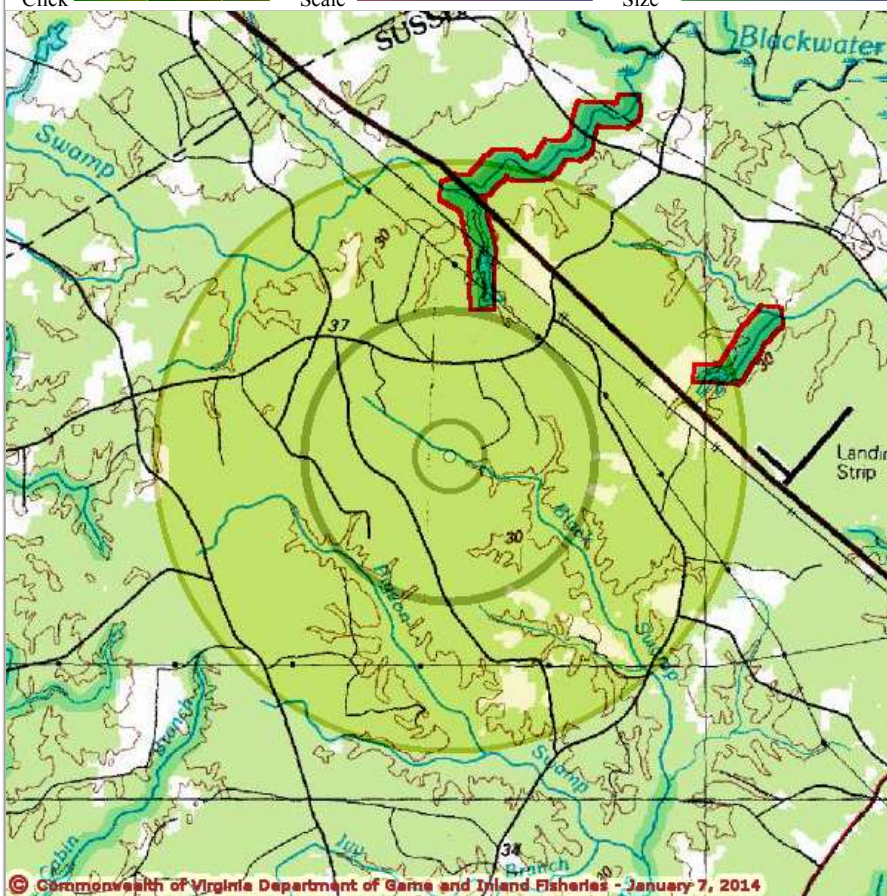
Map Overlay Legend

-  Position Rings
1 mile and 1/4
mile at the
Search Point
-  2 mile radius
Search Area
-  Data
Observation Site

Virginia Fish and Wildlife Information Service



Map Click **Pan** **Id** **M** Map Scale **In** **Zoom** **Out** Screen Size **Small** **Size** **Big** [Help](#)



Point of Search 37,03,41.2 -77,10,01.3

Map Location 37,03,41.2 -77,10,01.3

Select Coordinate System: ☒ Degrees, Minutes, Seconds Latitude - Longitude

☐ Decimal Degrees Latitude - Longitude

☐ Meters UTM NAD83 East North Zone

☐ Meters UTM NAD27 East North Zone

Base Map source: USGS 1:100,000 topographic maps (see Microsoft.terraserver-usa.com for details)

Map projection is UTM Zone 18 NAD 1983 with left 302531 and top 4108685. Pixel size is 16 meters. Coordinates displayed are Degrees, Minutes, Seconds North and West. Map is currently displayed as 600 columns by 600 rows for a total of 360000 pixels. The map display represents 9600 meters east to west by 9600 meters north to south for a total of 92.1 square kilometers. The map display represents 31501 feet east to west by 31501 feet north to south for a total of 35.5 square miles.

Topographic maps and Black and white aerial photography for year 1990+-

are from the United States Department of the Interior, United States Geological Survey.
Color aerial photography aquired 2002 is from Virginia Base Mapping Program, Virginia
Geographic Information Network.
Shaded topographic maps are from TOPO! ©2006 National Geographic
<http://www.national.geographic.com/topo>
All other map products are from the Commonwealth of Virginia Department of Game and Inland
Fisheries.

map assembled 2014-01-07 14:38:54 (qa/qc December 5, 2012 8:04 - tn=512779.0
dist=3218.6881)
\$poi=37.0614444 -77.1670278

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Department of Conservation & Recreation

CONSERVING VIRGINIA'S NATURAL & RECREATIONAL RESOURCES

Web Project ID: WEB0000002308

Client Project Number:

PROJECT INFORMATION

TITLE: VA0092797

DESCRIPTION: Proposed wastewater treatment plant; treated leachate discharge up to 300,000 GPD from Atlantic Waste Disposal, Inc.

EXISTING SITE CONDITIONS: Landfill treated wastewater discharge to Black Swamp

QUADRANGLES: Disputanta South

COUNTIES: Sussex

Latitude/Longitude (DMS): 37°3'50.3495"N / 77°10'19.2502"W

Acreage: 50 acres

Comments:

REQUESTOR INFORMATION

Priority: N

Tier Level: Tier II

Tax ID:

Contact Name: Brad

Company Name: DEQ

Address: 4949-A Cox Rd

City: Glen Allen

State: VA

Zip: 23060

Phone: (804)527-5129

Fax: (804)527-5106

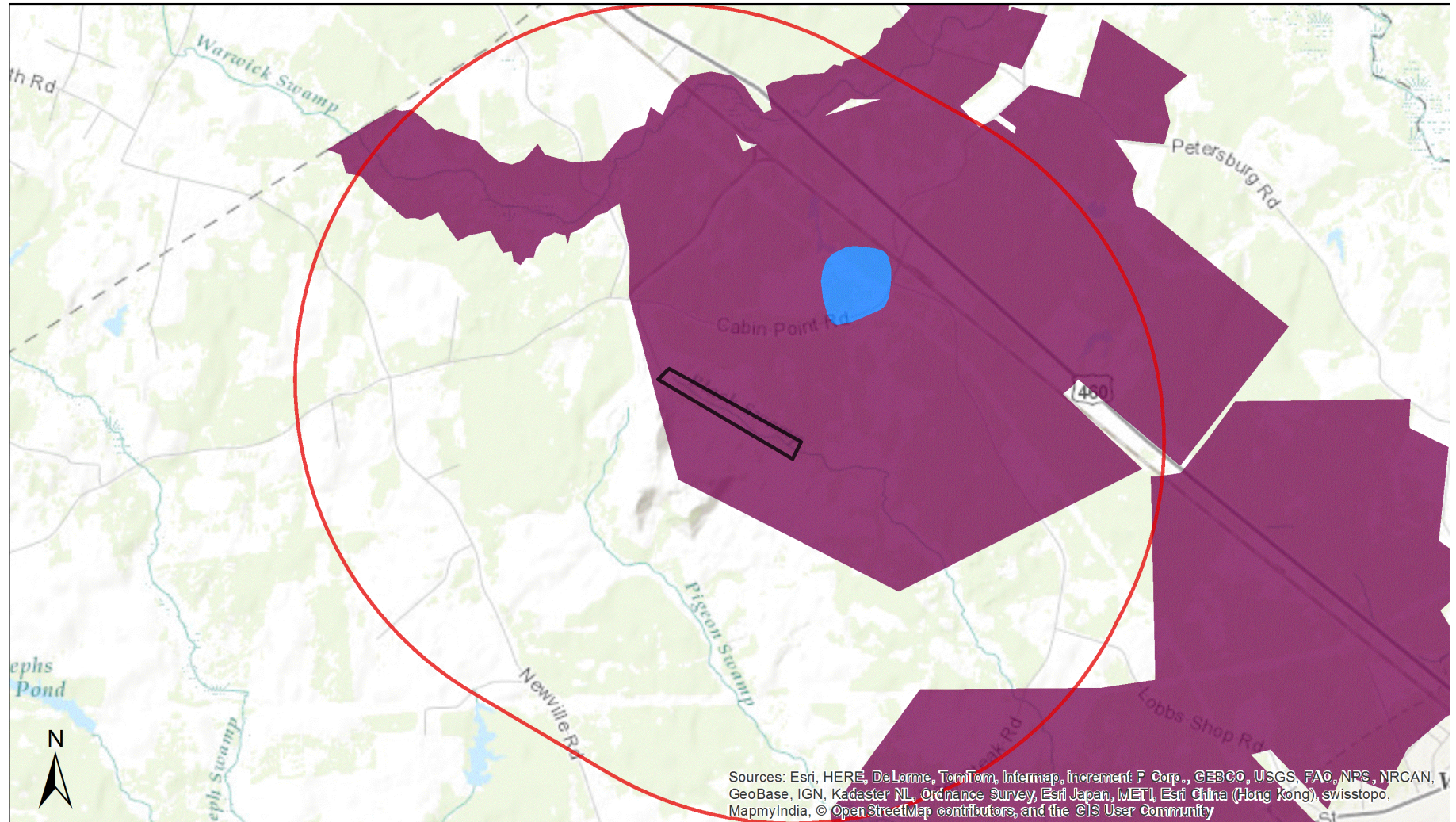
Email: bradford.ricks@deq.virginia.gov

Conservation Site	Site Type	Brank	Acreage	Listed Species Presence
	GLNHR	NA	0	NL
	GLNHR	NA	0	NL
	GLNHR	NA	0	NL
	GLNHR	NA	0	NL
	GLNHR	NA	0	NL
	GLNHR	NA	0	NL
	GLNHR	NA	0	NL
	GLNHR	NA	0	NL
	GLNHR	NA	0	NL
WARWICK SWAMP POWERLINE	Conservation Site	B5	84	NL
Natural Heritage Screening Features within Search Radius				

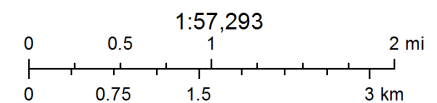
Site Name	Group Name	Common Name	Scientific Name	GRANK	SRANK	Fed Status	State Status	EO Rank	Last Obs Date	Precision
	Vascular Plant	American halfchaff sedge	Lipocarpa maculata	G5	S1			H		
	Vascular Plant	Slender Rattlesnake-root	Nabalus autumnalis	G4G5	S2			H		G
	Vascular Plant	Barratt's Sedge	Carex barrattii	G4	S2			H		M
WARWICK SWAMP POWERLINE	Vascular Plant	Pine barren sandreed	Calamovilfa brevipilis	G4	S1			C		
WARWICK SWAMP POWERLINE	Vascular Plant	Slender Nutrush	Scleria minor	G4	S2			C		
	Vascular Plant	Bog Rush	Juncus elliotii	G4G5	S1S2			H		G
	Vascular Plant	Rafinesque's seedbox	Ludwigia hirtella	G5	S1			D		S
	Vascular Plant	Short-beaked beaksedge	Rhynchospora nitens	G4?	SH			H		G
	Vascular Plant	Hairy St. John's-wort	Hypericum setosum	G4G5	S1S2			H		G
	Vascular Plant	Hairy St. John's-wort	Hypericum setosum	G4G5	S1S2			H		G
	Vascular Plant	Compressed plumegrass	Saccharum coarctatum	G5?	S1?			H		M
WARWICK SWAMP POWERLINE	Vascular Plant	Red Milkweed	Asclepias rubra	G4G5	S2			CD		S
WARWICK SWAMP	Vascular Plant	Large spreading pogonia	Cleistesiospis divaricata	G4	S1			D		S

Site Name	Group Name	Common Name	Scientific Name	GRANK	SRANK	Fed Status	State Status	EO Rank	Last Obs Date	Precision
POWERLINE	Vascular Plant	Large death-camass	Zigadenus glaberrimus	G5	S1			H		G
WARWICK SWAMP POWERLINE	Vascular Plant	Large death-camass	Zigadenus glaberrimus	G5	S1			D		S
Natural Heritage Resources within Search Radius										
Intersecting Predictive Models										
Predictive Model Results										

VA0092797



- | | | | |
|-------------------------------------------------------------------------------------|-----------------------|-------------------------------------------------------------------------------------|-------------------|
|  | Project Area |  | Conservation Site |
|  | Buffered Project Area |  | GLNHR |
| | NH Screening Features |  | SCU |



Quads: Disputanta South

Counties: Sussex

Company: DEQ

Lat/Long: 370350 / -771019



COMMONWEALTH of VIRGINIA
DEPARTMENT OF CONSERVATION AND RECREATION

The project mapped as part of this report has been searched against the Department of Conservation and Recreation's Biotics Data System for occurrences of natural heritage resources from the area indicated for this project. Natural heritage resources are defined as the habitat of rare, threatened, or endangered plant and animal species, unique or exemplary natural communities, and significant geologic formations.

According to the information currently in Biotics files, NATURAL HERITAGE RESOURCES HAVE BEEN DOCUMENTED within two miles of the indicated project boundaries and/or POTENTIAL HABITAT FOR NATURAL HERITAGE RESOURCES intersect the project area.

You have submitted this project to DCR for a more detailed review for potential impacts to natural heritage resources. DCR will review the submitted project to identify the specific natural heritage resources in the vicinity of the proposed project. Using the expertise of our biologists, DCR will evaluate whether your specific project is likely to impact these resources, and if so how. DCR's response will indicate whether any negative impacts are likely and, if so, make recommendations to avoid, minimize and/or mitigate these impacts. If the potential negative impacts are to species that are state- or federally-listed as threatened or endangered, DCR will also recommend coordination with the appropriate regulatory agencies: the Virginia Department of Game and Inland Fisheries for state-listed animals, the Virginia Department of Agriculture and Consumer Services for state-listed plants and insects, and the United States Fish and Wildlife Service for federally listed plants and animals. If your project is expected to have positive impacts we will report those to you with recommendations for enhancing these benefits.

There will be a charge for this service for "for profit companies": \$60, plus an additional charge of \$35 for 1-5 occurrences and \$60 for 6 or more occurrences.

Please allow up to 30 days for a response, unless you requested a priority response (in 5 business days) at an additional surcharge of \$500. An invoice will be provided with your response.

We will review the project based on the information you included in the Project Info submittal form, which is included in this report. Also any additional information including photographs, survey documents, etc. attached during the project submittal process and/or sent via email referencing the project title (from the first page of this report).

Thank you for submitting your project for review to the Virginia Natural Heritage Program through the NH Data Explorer. Should you have any questions or concerns about DCR, the Data Explorer, or this report, please contact the Natural Heritage Project Review Unit at 804-371-2708.



COMMONWEALTH of VIRGINIA
DEPARTMENT OF CONSERVATION AND RECREATION

600 East Main Street, 24th Floor
Richmond, Virginia 23219
(804) 786-6124

MEMORANDUM

DATE: August 11, 2014
TO: Brad Ricks, DEQ
FROM: Rene' Hypes, DCR-DNH
SUBJECT: VA0092797, Atlantic Waste Disposal, Inc.

The Department of Conservation and Recreation's Division of Natural Heritage (DCR) has searched its Biotics Data System for occurrences of natural heritage resources from the area outlined on the submitted map. Natural heritage resources are defined as the habitat of rare, threatened, or endangered plant and animal species, unique or exemplary natural communities, and significant geologic formations.

Biotics documents the presence of natural heritage resources within two miles of the project area. However, due to the scope of the activity and the distance to the resources, we do not anticipate that this project will adversely impact these natural heritage resources.

Under a Memorandum of Agreement established between the Virginia Department of Agriculture and Consumer Services (VDACS) and the DCR, DCR represents VDACS in comments regarding potential impacts on state-listed threatened and endangered plant and insect species. The current activity will not affect any documented state-listed plants or insects.

There are no State Natural Area Preserves under DCR's jurisdiction in the project vicinity.

New and updated information is continually added to Biotics. Please re-submit project information and map for an update on this natural heritage information if the scope of the project changes and/or six months has passed before it is utilized.

The Virginia Department of Game and Inland Fisheries (VDGIF) maintains a database of wildlife locations, including threatened and endangered species, trout streams, and anadromous fish waters that may contain information not documented in this letter. Their database may be accessed from <http://vafwis.org/fwis/> or contact Gladys Cason (804-367-0909 or Gladys.Cason@dgif.virginia.gov). According to the information currently in our files, Cabin Branch and Unnamed tributary of Joseph Swamp 6, which have been designated by the Virginia Department of Game and Inland Fisheries (VDGIF) as "Threatened and Endangered Species Waters" for the Blackbanded sunfish are within 2 miles of the project area. Therefore, DCR recommends coordination with

*State Parks • Soil and Water Conservation • Outdoor Recreation Planning
Natural Heritage • Dam Safety and Floodplain Management • Land Conservation*

Virginia's regulatory authority for the management and protection of this species, the VDGIF, to ensure compliance with the Virginia Endangered Species Act (VA ST §§ 29.1-563 – 570).

Thank you for the opportunity to comment on this project.

CC: Ernie Aschenbach, VDGIF

Attachment I
Owner Comments

Ricks, Bradford (DEQ)

From: Ricks, Bradford (DEQ)
Sent: Thursday, October 09, 2014 4:35 PM
To: 'Brazil, Brian'
Cc: 'Hater, Gary'; Torrens, Kevin; Winter, Kyle (DEQ)
Subject: RE: VADEQ_VA0092797_owners comments

Brian,

Thank you for your comments received on 10/7/14 regarding draft VPDES Permit No. VA0092797. I have reproduced your comments below with our response in italics.

1. The permit documentation indicates that there is no discharge volume limit. We would like to confirm that if the plant's treatment capacity is expanded that it will not be necessary to revise any of the documents or submit plans for public comment. If that is not the case, we would like to have the permit documents indicate that the facility anticipates a maximum discharge of up to 0.50 MGD in the future.

Part I.A.1 specifically authorizes discharge from the 0.20 MGD facility and Part I.A.2 specifically authorizes discharge from the 0.50 MGD facility. Note that both sections require DEQ approval before operating the 0.50 MGD facility. Part I.B.11 requires submittal of a CER for approval prior to constructing or expanding the treatment works from 0.20 MGD to 0.50 MGD. No other authorization or public notice is required for this expansion to take place.

2. During discussions with DEQ staff, the potential of moving the monitoring location for dissolved oxygen (DO) had been mentioned. As the effluent will be flowing through a manmade collection pond upstream of the Black Swamp Creek, we would like consideration to move ONLY the DO compliance point to the spill way of this pond. This would allow WM to utilize natural re-aeration along with installed mechanical aeration, if necessary, to oxygenate the treated water. We will believe this strategy is consistent with the intent of the permit to protect the water quality of the Black Swamp Creek. Therefore, WM is requesting that the DO compliance point be the discharge spill way of the collection pond and that all other permit conditions remain at the end of pipe as currently written in the permit.

The permit has been revised to specify the DO sampling point as "the discharge from the pond which receives treated effluent". This sampling point will provide the benefit of verifying that the downstream channel is protected against potentially low dissolved oxygen.

3. During our meeting with VADEQ staff on August 19, 2014, we discussed the potential for accepting liquids from other facilities. It was our understanding that the permit would not exclude this but would also not explicitly authorize this activity. For long-term clarity of the record, WM is requesting that such language be included in the permit allowing for the acceptance, treatment and discharge of "off-site" liquids and provides the following suggested text:

"The Atlantic Waste Disposal facility is authorized to accept, treat, and discharge liquids associated with solid waste management operations from off-site sources. If such liquids are other than those associated with solid waste management operations, appropriate permit adjustments and approvals will be required"

In response to this request, Permit condition I.B.12 was added to the permit with the following language: "Indirect Dischargers: The facility is authorized to accept, treat, and discharge liquids associated with solid waste management operations from off-site sources. The permittee shall submit to the DEQ Piedmont Regional Office for approval: any substantial change in the character of pollutants being introduced into the treatment works by an offsite source not introducing pollutants into the treatment works at the time of issuance of this permit. Adequate notice shall include information on (i) the quality and quantity of effluent introduced into the treatment works, and (ii) any anticipated impact of the change on the quantity or quality of effluent to be discharged from the treatment works."

You may note the term, “not introducing pollutants into the treatment works at the time of issuance...”. I recognize this is not currently applicable, but by inserting this language now, it will most likely carry forward through future permit reissuances.

Fact Sheet

4. Under the Discharge Description

a. Note 1 - the planned treatment methods are: grit removal, sedimentation/floatation, membrane filtration, reverse osmosis, and ion exchange.

Fact Sheet item 9 updated accordingly.

b. Note 2 - if the treatment capacity is expanded to 0.50 MGD, will the fact sheet need to be revised and the permit opened up to public comment again?

The permit authorizes expansion to the 0.50 MGD facility at average design flow. Modification will not be required for this modification to take place.

c. Can the compliance point for the dissolved oxygen be the discharge from the pond to the constructed wetlands? This has been discussed in previous conversations.

The permit has been modified to state: “To demonstrate compliance with Part I.A.1 / Part I.A.2, samples shall be taken at Outfall 001, discharge following treatment. Dissolved oxygen samples shall be taken at the discharge from the pond which receives treated effluent.”

5. There is typo on page 4 or 8 in the 2nd paragraph, 2nd line – delete “is”

Thank you, deleted.

6. Planning Conformance Statement – what planning document should WM update to include the new leachate treatment plant?

This fact sheet item is currently a placeholder for internal review from the water planning division of this office which has now been completed. No further documentation is necessary from WM at this time.

Permit Draft Comments

7. Section A Limitations and Monitoring Requirements –please clarify the discharge authorization. The facility will be designed for a maximum discharge of 0.30 MG (average 0.20 MG). Should the discharge be 0.30 MG at Outfall 001?

The facility design rates of 0.02 and 0.05 MGD specified in Part I.A.1 and I.A.2, respectively, are considered design flow rates and do not reflect peak or maximum flow values which may exceed the design average.

Public Notice Comments

8. Under the project description section, the announcement indicates that the facility will discharge up to 300,000 gallons per day. Does this discharge value need to reflect the potential future total discharge allowed by permit? At the time of expansion, would this need to go out for public comment again?

The public notice has been revised to state that the facility will discharge at a rate of up to 500,000 gallons per day.

Please let me know if you have any further comments or if you concur with the draft permit as currently prepared. Revised documents are available here: <http://www.deq.virginia.gov/filesare/wps/VA0092797/>

Sincerely,

*Brad Ricks
VPDES Permits
(804)527-5129*

Attachment J
Public Comments

MEMORANDUM
DEPARTMENT OF ENVIRONMENTAL QUALITY
Piedmont Regional Office

4949-A Cox Road, Glen Allen, VA 23060-6296

804/527-5020

TO: Michael P. Murphy, Regional Director

FROM: Bradford K. Ricks, Water Permit Writer

THROUGH: Kyle Ivar Winter, P.E., Deputy Regional Director

DATE: December 4, 2014

SUBJECT: Response to Public Comments and Dispensation of Request for Public Hearing
VPDES Permit No. VA0092797
Issued to Atlantic Waste Disposal, Inc., Sussex County

Background:

Section 9VAC25-31-290 of the VPDES permit regulation requires that public notice allowing a comment period of at least 30 days be given when a draft permit has been prepared. Section 9 VAC 25-31-300 allows any interested person to submit written comments on the draft permit and may request a public hearing; all such comments shall be considered in making the final decision to issue the permit. A response to significant comments received during the public comment period must be provided.

On October 22, 2013 and October 29, 2013, the Sussex-Surry Dispatch published the public notice that draft VPDES permit No. VA0092797 for Atlantic Waste Disposal, Inc. (AWD) was available for public review and comment. The comment period ended at 11:59 pm on November 24, 2014. During the 30 day public comment period, comments were received on November 21, 2014 from one citizen, Mr. Frank Irving, Executive Director of the Sussex Service Authority (SSA). Mr. Irving's comments include a request for public hearing.

Permit Summary:

On December 20, 2013, AWD submitted initial application for a VPDES permit to discharge 200,000 gallons per day (GPD) of treated industrial wastewater generated by the AWD landfill. The applicant requested on September 3, 2014 that the draft permit be revised to provide an expansion tier to discharge 500,000 GPD.

The proposed draft permit for re-issuance contains limitations and conditions that are consistent with the Water Quality Standards (9 VAC 25-260), applicable Federal Effluent Limitation Guidelines (40 CFR 445.24), and the Assamoosick Swamp and Tributaries Bacterial TMDL. The discharge is not addressed in any planning document but will be included when the plan is updated.

The draft permit proposes to limit the following parameters:

Dissolved oxygen (DO), pH, temperature, carbonaceous biochemical oxygen demand (cBOD₅), total suspended solids (TSS), total Kjeldahl nitrogen (TKN), α-terpineol, benzoic acid, *p*-Cresol, phenol, and total recoverable zinc.

The Virginia Department of Health Office of Drinking Water (VDH-ODW) provided the following comment in a memorandum dated January 14, 2014, "The raw water intake for the City of Norfolk waterworks is located approximately 31 miles downstream of the areas to be disturbed. This should be sufficient distance to minimize the impacts of the disturbances." VDH has no objections to the draft permit issuance.

Comments Received During the Public Notice Period

Comments received are summarized below with DEQ Piedmont Regional Office responses provided *in italics*.

1. Concern that granting AWD a permit to discharge 500,000 GPD could result in a reduction of any proposed expansion to SSA's Black Swamp Waste Water Treatment facility (VA0088978) by 500,000 GPD.

VPDES permits are written to maintain the Virginia Water Quality Standards specified by 9VAC25-260. These regulations place limits on water quality but do not establish limitations on discharge quantity to any Tier 1 or Tier 2 waterbody such as Black Swamp. Neither the VPDES Permit Regulation (9VAC25-31) nor the Water Quality Standards authorize the Department to limit the discharge volume of any existing or expanding facility downstream of another VPDES permitted discharge.

Further, the effluent limitations for both AWD and Black Swamp have been determined in accordance with the agency's "swamp policy", which establishes default concentrations for TKN, dissolved oxygen and cBOD₅. These limits are typically assigned without regard to the volume proposed to be discharged.

DEQ staff recommends that no change to the proposed permit is necessary in response to this comment.

2. Sussex County Board of Supervisors resolution #97-079 which establishes an exclusive service area for sewage and water systems in Eastern Sussex County, potentially gives Sussex Service Authority the exclusive authority to collect and treat waste waters generated in Eastern Sussex County.

While it is noted that landfill-generated leachate is not considered sewage as defined by 9VAC25-790-10 of the Virginia Sewage Collection and Treatment Regulations, the interpretation and implementation of the referenced resolution is the responsibility of Sussex County. The applicant provided a Local Government Ordinance Form signed by the County Administrator indicating that the proposed location and operation of the facility is consistent with all ordinances adopted pursuant to Chapter 22 (§15.2-2200 et seq.) of Title 15.2 of the Code of Virginia.

One reason for AWD requesting an expansion tier for the proposed treatment works is to address the possibility that publicly owned treatment works in the Chesapeake Bay watershed may need to restrict the acceptance of leachate in order to preserve treatment capacity for nutrients from other industrial users and domestic ratepayers. AWD contemplates hauling leachate from other landfills for treatment on site; this may be construed as something other than "waste waters generated in Eastern Sussex County".

At one time, the Sussex Service Authority's Black Swamp WWTF (VA0088978) treated a fraction of the leachate generated by the AWD. Periodic exceedances of Black Swamp's TKN effluent limitations were attributed to treatment of the leachate, even after the TKN limit was relaxed. In order to resolve these effluent limitation exceedances, SSA agreed to suspend the acceptance of leachate from AWD. While SSA left open the possibility of accepting leachate in the future, DEQ has received no correspondence from SSA (aside from the referenced comment letter) to this effect.

DEQ staff recommends that no change to the proposed permit is necessary in response to this comment.

3. Concern that if partially treated or untreated wastewater enters the Potomac Aquifer through the receiving pond or wetlands, drinking water provided by this groundwater source would be affected. This concern includes a request that the Piedmont Regional Office seek an opinion from the DEQ Office of Surface and Groundwater Supply.

In response to the above inquiry, DEQ Groundwater Withdrawal Permitting Program Manager, Craig Nicol provided the following statement:

"The Stony Creek area to the west of Waverly (close to the fall line) does have this situation where the surface water appears to be hydraulically connected to the Potomac Aquifer. The confining units are thin and are highly dissected by streams causing aquifers to outcrop along major rivers and generally transition from confined to unconfined.

However, this situation does not extend to the more eastern areas such as Waverly and Black Swamp. Given information from Waverly and the SSA Northeastern Regional Water Systems this should not be a concern."

As VPDES discharge permits are prepared to protect surface waters in accordance with the Virginia Water Quality Standards, these requirements are also established to protect groundwater. Any untreated wastewaters discharged to pits, ponds, or lagoons are required to have controls to prevent possible impacts to groundwater. This proposed permit does not authorize the storage of untreated wastewaters in pits, ponds, or lagoons. With the exception of dissolved oxygen, all effluent limitations must be met before being discharged to the receiving pond.

DEQ staff recommends that no change to the proposed permit is necessary in response to this comment.

4. Request for explanation of the increase in average discharge flow from 200,000 GPD to 500,000 GPD.

During discussions regarding the initial draft permit, AWD became aware that significant fees would be incurred if they desired to expand the facility at a future date during the term of the permit. In order to provide the ability to expand in this permit, AWD requested that the permit include two flow tiers: initial facility construction to discharge 200,000 GPD and a second flow tier to provide for facility expansion to 500,000 GPD.

DEQ staff recommends that no change to the proposed permit is necessary in response to this comment.

5. Why was Sussex County not notified of the increase in average discharge flow from 200,000 GPD to 500,000 GPD?

The applicant provided approved Local Government Ordinance Forms for the initial request to discharge 200,000 GPD and for the revised request to discharge 500,000 GPD. The revised form requesting approval for the 500,000 GPD discharge was submitted to Sussex County in late October and the approved form was received by the Department on December 4, which may explain why the Sussex Service Authority was not aware of the proposed increase at the time of permit public notice.

DEQ staff recommends that no change to the proposed permit is necessary in response to this comment.

6. Request for a public hearing to inform Sussex County residents of the details of the proposed facility.

In accordance with agency policy and guidance, permit development supporting documentation is included in and/or attached to the proposed fact sheet. Area residents received notice of the draft permit including the ability to review the permit, application, and supporting documentation via notice in the Sussex-Surry Dispatch on October 22 and October 29, 2014. The public comment period continued until November 24, 2014. The Department received one request for a public hearing.

List of Commenters (Copies of all comments are attached)

Frank Irving, Executive Director, Sussex Service Authority

Criteria for Dispensing Requests for Public Hearing:

§62.1-44.15:02.C of the Code of Virginia and 9VAC 25-230-50.A of Procedural Rule No. 1 states that for a public hearing to be granted, the Director must find there is: a) significant public interest; b) there are substantial, disputed issues relevant to the issuance of the permit in question; and c) the action requested is not on its face inconsistent with, or in violation of, the State Water Control Law, federal law or any

regulation promulgated thereunder. §62.1-44.15:02.C.1 of the Code further defines significant public interest as evidenced by the receipt of a minimum of 25 individual requests for public hearing or Board consideration. Alternatively, §62.1-44.15:02.F of the Code, allows for the Director, at his discretion, to convene a public hearing on a permit action or submit a permit action to the Board for its consideration.

Staff Recommendations:

Staff finds the number of individual requests for public hearing received does not meet the statutory requirements of significant public interest to qualify for convening a public hearing for the issuance of VPDES permit VA0092797, Atlantic Waste Disposal, Inc.

In addition, DEQ staff finds the proposed VPDES discharge permit VA0092797 to have been prepared in accordance with all applicable statutes, regulations and agency practices; the effluent limits and conditions in the permit have been adequately established to protect instream beneficial uses, fish and wildlife resources, and to maintain all applicable water quality standards; and all public comments relevant to the permit have been considered. It is further recommended the Director direct staff to proceed with approving reissuance of VPDES permit VA0092797 as public noticed.

STAFF CONTACT:

Bradford Ricks
DEQ Piedmont Regional Office
4949-A Cox Road
Glen Allen, Virginia 23060
Phone: (804)527-5129
Email: Bradford.Ricks@deg.virginia.gov

APPROVED: _____


Michael P. Murphy
Piedmont Regional Director

DATE: _____

December 16, 2014

Sussex Service Authority

4385 Beef Steak Road
Waverly, Virginia 23890
Phone: (804) 834-8930
Fax: (804) 834-8933

November 21, 2014

Mr. Brad Ricks
Virginia DEQ, Piedmont Regional Office
4949-A Cox Road
Glen Allen, VA 23060

VIA: Email on 11/21/14
Original by U.S. Mail

Dear Mr. Ricks:

I am writing in response to the public notice published in the October 22, 2014 Sussex Surry Dispatch concerning Atlantic Waste Disposal, Inc. requested permit VA0092797. As Director of the Sussex Service Authority, located at 4385 Beef Steak Road, Waverly, VA., I have several major concerns over this permit being granted.

My first major concern is that our Black Swamp Waste Water Treatment facility is currently permitted to discharge 600,000 gallons per day to the Black Swamp. We currently have over 300,000 gallons per day of available excess capacity at our Black Swamp facility.

We have plans to increase capacity of our Black Swamp Wastewater Treatment Facility to 1.6 million gallons per day in anticipation of Sussex County's Industrial Mega-Site for which land has been secured and is currently being marketed by the County and State officials. We are concerned that granting Atlantic Waste Disposal, Inc. a permit to discharge into Black Swamp could decrease our planned 1 million gallon per day increase by 500,000 gallons per day thus affecting development of the Industrial Mega-Site. Also, as per the attached resolution (#97-079) the County of Sussex has established an exclusive service area for sewage and water systems in Eastern Sussex County. We believe this ordinance gives Sussex Service Authority the exclusive authority to collect and treat waste waters generated in Eastern Sussex County.

Secondly, the facility will discharge treated industrial waste waters into a man-made water body (lake) which discharges to man-made wetlands before final discharge to Black Swamp. This water body we believe is connected hydraulically to the groundwater aquifer in our area. The Authority is very concerned of how this will affect the Potomac aquifer that we withdraw water from. If any partially treated or untreated waste water enters this water body, our groundwater source would be affected. The wells for our Northeastern Regional Water System withdraw water from the Potomac Aquifer to supply the Department of Corrections Sussex I & Sussex II facilities. Any contamination of the Potomac Aquifer would require us to install additional treatment equipment to maintain acceptable water quality. We question whether the DEQ Office of Surface & Ground Water Supply has been involved in the review of this permit application. An opinion from this office should be sought since the water body is believed to be connected to an aquifer located in the Eastern Virginia Ground Water Management Area.

Thirdly, the original application submitted to you on December 6, 2013 by Brown and Caldwell stated that the system will be designed for an average flow rate capacity of 200,000 gpd with a peak hydraulic capacity of 250,000 gpd. When an increase was requested, why was Sussex County not notified? Please explain the reason for the increase. We believe a public hearing should be held to inform the residents of Sussex County the details of the proposed facility.

I would be happy to discuss any of these concerns with you and look forward to hearing back from you.

Sincerely,

A handwritten signature in black ink, appearing to read "Frank Irving", with a stylized flourish at the end.

Frank Irving
Executive Director

CC: Ms Deborah Davis, Sussex County Administrator
Mr. Andre Greene, Sussex County Director of Planning
Sussex County Supervisors
Sussex Service Authority Board Members
Mr. Scott Kudlas, Virginia DEQ



Resolution #97-079

At a meeting of the Board of Supervisors of the County of Sussex held at the Courthouse thereof, on the 17th day of October 1996.

PRESENT:

Charlie E. Caple, Jr.
J. Lafayette Edmond
Robbie F. Owen
Eldridge Lucas, III
Russell L. Westbrook

VOTE:

aye
aye
aye
aye
aye

Rufus E. Tyler

ABSTAIN

ABSENT:

RESOLVED that the Board of Supervisors of the County of Sussex, Virginia hereby approves this 17th day of October 1996:

AN ORDINANCE TO ESTABLISH AN EXCLUSIVE SERVICE AREA FOR A SEWAGE AND WATER SYSTEM WITHIN SUSSEX COUNTY, VIRGINIA, INCLUDING FIXING OF RATES OR CHARGES THEREFOR AND THE PROHIBITION, RESTRICTION OR REGULATION OF ENTITIES PROVIDING SUCH SERVICES, TO PROVIDE FOR ENFORCEMENT THEREOF AND PENALTIES FOR VIOLATION AS PROVIDED BY VIRGINIA CODE 15.1-292.2.

BE IT ORDAINED BY THE BOARD OF SUPERVISORS OF SUSSEX COUNTY pursuant to its authority granted in Section 15.1-292.2 of the Code of Virginia as follows, to-wit:

SECS. 15-5. INTENT TO REGULATE.

The Board of Supervisors does hereby exercise its powers to regulate sewage collection, treatment and disposal service and water service notwithstanding any anti-competitive effect.

SEC. 15-5-A. EXCLUSIVE SERVICE AREA, EASTERN SUSSEX.

That part of Sussex County lying and being east of the north - south division of the County by a line coterminous with State Route No. 35, also known as Jerusalem Plank Road, where there exists, or there is contemplated, a water main or a sanitary sewer collection line reasonably available or to be available as determined by the Sussex Department of Public Utilities for service of every lot or parcel of land therein.

SEC. 15-5-B. AUTHORITY TO FIX AND ESTABLISH RATES OR CHARGES.

The Board of Supervisors may from time to time fix and establish rates, charges, connection fees or proffers by resolution and when so adopted and published shall be the rates and charges for the Department of Public Utilities. A proffer required by such schedule shall be deemed to be a part thereof. Charges may include front footage charges.

SEC. 15-5-C. PROHIBITIONS IN EXCLUSIVE AREAS.

No person, firm, corporation or other entity shall construct, install or use or permit to be used any potable water delivery system or sewage collection system within an exclusive service area designated by the Board of Supervisors in Sussex County without obtaining a permit.

SEC. 15-5-D. PERMITS REQUIRED.

No person, firm, corporation, or other entity shall construct, install or use or permit to be used a potable water delivery system or sewage collection system without first applying for and receiving a permit for such system.

SEC. 15-5-E. WATER AND SEWAGE COLLECTION SYSTEM DEFINED.

1. Potable - shall mean water suitable in quality for human consumption or intended therefor.

2. Water System - the entire water delivery and treatment system of Sussex County from the point or place of origin to the point of delivery to the consumer.

3. Sewage Collection System - the entire sewage collection system of Sussex County from the point of connection at the property line to the point of discharge.

4. As to both the water system and sewage collection system all public systems permitted by the County shall be deemed to be a part of said system and subject to regulation, fees and control of Sussex County.

SEC. 15-5-F. PENALTIES FOR VIOLATION.

Any person, firm, corporation or other entity violating any provision hereof shall be punished in accordance with Virginia Code, 1950, Section 15.1-348, as from time-to-time amended or recodified.

SEC. 15-5-G. EFFECTIVE DATE.

This ordinance shall be effective from its adoption.

SEC. 15-6. MASTER PLAN.

The Sussex County "Water and Sewer Utilities Master Plan for Eastern Sussex County" duly adopted on September 19, 1996 and amendments and successive master plans are and shall be the Master Plan for Sussex County.

COPY TESTE:

Mary E. Jones
Clerk